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an analysis of Turkish Navy's spare part
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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

MBA PROFESSIONAL REPORT

IMPROVING FOREIGN MILITARY SALES PROCUREMENT: AN ANALYSIS OF TURKISH NAVY'S SPARE PART PROCUREMENTS, DISCREPANCIES, AND REPAIRS

March 2016

By: Deniz Can Uysal

**Advisors: Raymond Jones
Max V. Kidalov**

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OF TURKISH NAVY'S SPARE PART PROCUREMENTS, DISCREPANCIES,
AND REPAIRS**

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Submitted in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

**NAVAL POSTGRADUATE SCHOOL
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IMPROVING FOREIGN MILITARY SALES PROCUREMENT: AN ANALYSIS OF TURKISH NAVY'S SPARE PART PROCUREMENTS, DISCREPANCIES, AND REPAIRS

ABSTRACT

This MBA professional report explains how the overall Foreign Military Sales (FMS) program, its Direct Requisitioning Procedures, Repair of Repairables Procedures, and as well as its Supply Discrepancy Reports processes work. Then, this research statistically analyzes the transaction records of the United States' FMS program to Turkish Navy (U.S./TN FMS) procedures while exploring its history and existing state. Although the findings are encouraging, more research is required to provide definitive results from which policy changes can be made. Preliminary analysis, however, reveals that there are significant challenges within the U.S./TN FMS program, which have led to customer disappointment resulting in downward trends in transactions and eventually changes in the Turkish Navy's (TN) foreign procurement policies. The results of the preliminary analysis demonstrate a need for structural changes in FMS processes and procedures. The recommendations for the TN are to cull pieces from the other options currently available to increase the effectiveness of the existing foreign purchases and to enhance the efforts for improving its indigenous capabilities to cover the FMS supporting activities.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACCP	Accelerated Case Closure
AECA	Arms Export Control Act
ASN-FM&C	Assistant Secretary of the Navy, Financial Management and Comptroller
BER	Beyond Economic Repair
CCSA	Case Closure Suspense Account
CLSSA	Cooperative Logistics Support Arrangement
CONUS	Continental United States
DFARS	Defense Federal Acquisition Supplement
DFAS-JAXBF/IN	Defense Finance and Accounting Service-Indianapolis
DFAS-SCA	Defense Finance and Accounting Service
DLA	Defense Logistics Agency
DOD	Department of Defense
DOS	Department of State
DRP	Direct Requisitioning Procedures
DSCA	Defense Security Cooperation Agency
DTS	Defense Transportation System
EDA	Excess Defense Articles
FAA	Foreign Assistance Act
FAR	Federal Acquisition Regulation
FF	Freight Forwarder
FMFP	Foreign Military Funding Program
FMS	Foreign Military Sales
FMSO	Foreign Military Sales Order
IA	Implementing Agency
IPO	International Program Office
JSUMMAT	Joint United States Military Mission for Aid to Turkey
LOA	Letter of Acceptance
LOAD	Letter of Acceptance Data
LOR	Letter of Request

MDE	Major Defense Equipment
MILTRIP	Military Standard Requisitioning and Issue Procedures
MISIL	Management Information System for International Logistics
MSC	Management of Security Cooperation
NATO	North Atlantic Treaty Organization
NAVSUP	Naval Supply Systems Command
NAVSUP-WSS	Navy Supply and Weapon System Support
NIM	Navy Inventory Manager
OA	Obligational Authority
ODC	Office of Defense Cooperation
P&A	Price and Availability
PROS	Parts and Repair Ordering System
QDR	Quality Deficiency Reports
RFRS	Request for Repair Service
RIRO	Repairable Item Replace Option
RM	Repair Manager
ROR	Repair of Repairables
SA	the United States Security Assistance
SDR	Supply Discrepancy Report
SME	Significant Military Equipment
SSC	Supply and Service Complete
T&Cs	Terms and Conditions
TN	Turkish Navy
TNF	Turkish Naval Forces
TPA	Total Package Approach
ULO	Unliquidated Obligations
UMMIPS	Uniform Materiel Movement and Issue Priority System
USG	United States Government
U.S./TN FMS	United States FMS Program to Turkish Navy
WWRS	World Wide Redistribution Services

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I. INTRODUCTION

The purpose of this chapter is to create a clear understanding of the research problems and how they will be analyzed. It consists of seven sections: background, problem identification and analysis planning, purpose of study, research questions, methodology, scope and limitations, and report overview. Section A, Background, provides brief information about the U.S./TN FMS program. Section B, Problem Identification and Analysis Planning, explores the potential problems in U.S./TN FMS and explains how those problems are analyzed. Section C, Purpose of Study, describes the overarching aim of this research. Section D, Research Questions, provides the research questions that this research tries to answer. Section E, Methodology, explains the methods that are used in analysis. Section F, Scope and Limitations, expresses the scope of this research while mentioning the limitations that affects the results. Section G, Report Overview, summarizes this report.

A. BACKGROUND

The last century has seen exponential advancements in technology and its increased significance in arms sales. The importance of arms sales increases with cutting-edge arms technology. Regardless of the parties—governments or companies—involved in the transaction, it is much more than just a commercial activity. The transactions play a vital role in a government's foreign and domestic policies. In today's complex strategic environment and delicate foreign-relationship arena, purchaser countries must make careful decisions among numerous choices. Source selection may include many considerations such as a system's total acquisition cost, budgetary implications and funds, delivery schedule, performance, life-cycle logistic support, interoperability with current systems and allied forces, industrial utilization, and politics (Defense Institute of Security Assistance Management [DISAM], 2015, p. 15-1). Most countries prefer to use their allies as sources of arms procurement for various political, economic, and interoperability reasons. Since arms sales deal with tremendous amounts of money and extensive labor, their role in domestic policy cannot be ignored from the perspectives of

employment, capital formation, as well as research and development (Perfilio, 2007, p. 3).

As a North Atlantic Treaty Organization (NATO) member, Turkey has an extensive arms sales history and deep ties with the United States. Turkey's critical geo-strategic and geo-political location at the heart of Afro-Eurasia makes it mandatory to have potent armed forces to remain a permanent, stable, and prosperous country (Turkish Naval Forces [TNF], 2015, Preface). Turkey has always aimed to be a deterrent force, ready for any conflict near one of the world's most problematic regions. In order to reach its national security goals and accomplish NATO missions successfully, Turkey has sought to use U.S. Security Assistance (SA) as a tool to satisfy its military needs. The United States became a major arms supplier for its allies, especially after the Second World War, once it was determined that the transfer of defense articles could be used as a primary tool to carry out its foreign policy and national security strategy (DISAM, 2015). Significantly, the foundation of SA and all other military aid programs started with the Truman Doctrine: Greece-Turkey Aid Act of 1947. Before this act, the United States "had never before entered into a formal assistance program with a foreign state during general peacetime conditions" (DISAM, 2015, p. Appendix 2, p. 4). Therefore, the arms-sale relationship between the United States and Turkey can be traced back to the roots of SA. As a result, Turkish Naval Forces have entered into many arms transactions with the United States to modernize its fleets (Kackar, 1995).

Today, there are many U.S.-originated defense articles that require continuous logistical support, such as Perry-class frigates and Seahawk helicopters, existing in the TN's inventory, which creates a constant commercial relationship between both countries. This support has been realized mostly through the Department of Defense (DOD)'s Foreign Military Sales (FMS) program and includes but is not limited to repair and spare parts, maintenance, support equipment and services, and publications. Given that "the largest portion of weapon system life-cycle cost (approximately 60%-70%)" comes from operation and support activities, according to the DOD (2011), rigorous efforts to improve the effectiveness of these life-cycle support activities should be an important concern for the customer agencies (p. 70). As a customer with a limited budget,

Turkish Naval Forces (TNF) have been providing maritime security and “regional and global peace and stability within [the] UN, NATO and other multinational organizations” (Turkish Naval Forces, 2015, Preface) while trying to achieve the most cost- and schedule-effective options for its life-cycle support activities in a time of cost savings, budget cuts, and sequestration.

B. PROBLEM IDENTIFICATION AND ANALYSIS PLANNING

The relationship between arms suppliers and customers has evolved at an incredible pace in response to an ever-changing economic, political, and technological environment. However, the U.S. FMS program could not keep up with this pace and evolved more slowly than its surrounding circumstances (Jaafar, Malallah, & Sharif, 2004). Constant operations and missions, especially in the Middle East, are wearing down older systems and creating capability gaps. In addition to the need to quickly fill these gaps, fast technological developments render some existing systems obsolete. According to Mehta (2015), the timeline and the very slow speed of the FMS processes lead to customer complaints, which are not new but more urgent than before.

The TN has many U.S. end items in its inventory as a result of the alliance with the United States and NATO. For life-cycle support of these items, the TN uses FMS Direct Requisitioning Procedures (DRP) and Repair of Repairables (ROR) procedures to procure support materiel and repair services. However, problems in the FMS process and procedures combined with political events have resulted in that TN diversified in suppliers.

In light of this, this research illustrates the existing state and effectiveness of the FMS DRP, ROR, and Supply Discrepancy Report (SDR) procedures while identifying alternative means to meet the TN’s needs. In doing so, this research conducts a literature review about the history of the U.S./TN FMS program and associated procedures as well as provides alternative methods to obtain U.S. materiel and repair services. Statistical analysis of the TN’s DRP, ROR, and SDR transactions should show the current state of these procedures. Findings of these activities will conclude the research.

C. PURPOSE OF STUDY

The purpose of this study is to analyze and examine the current state of the U.S./TN FMS program with an emphasis on DRP, ROR, and SDR procedures. This research identifies potential problems in this program and associated procedures while exploring potential alternative methods to obtain the same U.S. materiel and repair services. This study, then, offers information and recommendations relevant to decision-making authorities, which can be utilized to improve the U.S./TN FMS program and procedures in future strategies and policies.

D. RESEARCH QUESTIONS

In order to satisfy the purpose of this research, there are two specific questions that need to be addressed. These questions are as follows:

- What are the general picture and current state of the U.S./TN FMS program as well as the current state of its associated procedures?
- What are the alternative methods and improvements that can be considered to make the current state better?

E. METHODOLOGY

To answer the research questions, the research methodology includes a literature review on the U.S./TN FMS program with associated procedures and potential alternatives, a process analysis of these subjects, and a statistical analysis of the historical records of the U.S./TN FMS DRP, ROR, and SDR. The sources cited in the literature review include but are not limited to governmental and commercial publications, books, policy guides, reports, news articles, and periodicals.

The process analysis breaks down the FMS program and procedures into their constituent parts to show how these processes operate and what the purchaser's and the United States' inputs include. The process analysis was conducted to determine potential problems in the FMS structure that reduce the efficiency of the program and prevent it from reaching intended goals.

The statistical analysis of the historical records of the U.S./TN FMS DRP, ROR, and SDR transactions involves analytical approaches including descriptive statistics and

correlation analysis. The statistical analysis was conducted to identify current trends and factors affecting the efficiency of the procedures.

The literature review, process analysis, and statistical analysis are used to draw conclusions about the current state of U.S./TN FMS procedures with alternative methods, to provide recommendations for improvement of the potential problems, and to determine the areas requiring further research.

F. SCOPE AND LIMITATIONS

The scope of this research is to examine the U.S./TN FMS program and associated procedures. In doing so, this research analyzes the processes of FMS DRP, ROR, and SDR. For the purpose of creating a foundation for the process and statistical analysis, a history of the U.S./TN FMS program is provided. A comprehensive examination of the entire FMS program requires substantial research that falls beyond the focus of this paper.

This study is limited by the size, quality, and content of the historical data samples of the DRP, ROR, and SDR provided by the TN's Foreign Procurement Department. The size and content limitation of this data may affect outcomes and the margin of error of the results. Additionally, the study is limited to the procurement for the purchaser countries' navies since some of the processes and procedures are used only by the U.S. Navy and may not be applicable to other force structures and organizations of both sellers and purchasers.

While researching this paper, it was discovered that there is not much public information available due to the classification policies of the defense article transactions, which pose another limitation.

G. REPORT OVERVIEW

This report consists of five chapters. Chapter I gave a brief explanation of this research. It provided the background information, problem identification and analysis planning, purpose of study, methodology, and scope and limitations of the research. It

summarized why and how this research was conducted on U.S./TN FMS program and associated procedures.

Chapter II is the literature review and describes the SA and U.S./TN FMS programs throughout their history as well as processes and procedures. In addition, Chapter II explores potential alternative methods for obtaining the same U.S. materiel and repair services. It explains the overall FMS program and associated procedures for identifying potential problems that reduce the efficiency of the program.

Chapter III includes the data summary, statistical methodology, and the analysis of U.S./TN FMS procedures and transactions. It presents information about the datasets and limitations, a description of how the statistical analysis was conducted, and the results of the statistical analysis.

Chapter IV presents the findings from the literature review and data analysis to prepare for the conclusion. Findings obtained from each dataset are presented separately. Findings from the literature review includes the history; overall FMS process; the DRP, ROR, and SDR; and alternative methods. Chapter V draws conclusions from the findings, gives recommendations to improve the existing state, and points out the areas for future research. The conclusions include a general picture of U.S./TN FMS program, the existing state of U.S./TN FMS-associated procedures, and the suitability of alternatives for procurement of U.S. spare parts other than FMS's DRP and ROR. Recommendations consist of needed changes in the FMS program, improving the Turkish national industry for spares and repairs, and increasing the use of alternative methods. The chapter concludes with a summary of future research needed for more definitive results.

II. LITERATURE REVIEW

A. INTRODUCTION

This chapter provides background information about the FMS program, FMS DRP, ROR, and SDR procedures, as well as alternative methods to procure U.S. support materiel and repair services. It provides information about the history of Security Assistance (SA) to Turkey; an overview of FMS organizations, processes, and case types; and the U.S. Navy's organizations for FMS DRP, ROR, and SDR procedures.

B. WHAT IS U.S. SECURITY COOPERATION AND SECURITY ASSISTANCE?

As a governing document, the *Security Assistance Management Manual*, the governing document of SA, has outlined SA as an umbrella for twelve major programs, one of which is the FMS program (Defense Security Cooperation Agency [DSCA], 2003). According to DSCA (2003), SA is

a group of programs, authorized by law, which allows the transfer of military articles and services to friendly foreign Governments. Security Assistance transfers may be carried out via sales, grants, leases, or loans and are authorized under the premise that if these transfers are essential to the security and economic well-being of allied Governments and international organizations, they are equally vital to the security and economic well-being of the United States. (p. 29)

The Management of Security Cooperation explained Security Cooperation as described in Joint Publication 1-02:

All DOD interactions with foreign defense establishments to build defense relationships that promote specific U.S. security interests, develop allied and friendly military capabilities for self-defense and multinational operations, and provide U.S. forces with peacetime and contingency access to a host nation. (DISAM 2015, p. 1-1)

SA programs, including FMS, are fundamental tools for the U.S. government (USG) to reinforce its national security strategy and foreign policy objectives (DSCA, 2003). There are two main laws governing security assistance: the Foreign Assistance Act of 1961 and the Arms Export Control Act of 1976 (DISAM, 2015).

C. HISTORY

The roots of SA can be traced back to the Truman Doctrine that emerged shortly after the Second World War (WWII). Deeply concerned about armed minorities and aggressive communist pressure toward Greece and Turkey, President Truman made an historic speech to the U.S. Congress indicating that it was necessary to assist free nations in strengthening their economies and militaries to resist both totalitarianism and communist aggression. In regards to this goal, Truman made an emergency request for military and economic aid of \$400 million—equal to \$4.3 billion in 2015—for Greece and Turkey; the Greece-Turkey Aid Act of 1947 was enacted by the U.S. Congress. As the United States had never assisted a foreign state formally in peace time, this act initiated a new era for U.S. foreign policy. In the following three years, Turkey and Greece received over \$600 million—equal to \$6 billion in 2015. According to DISAM (2015), this legislation required U.S. personnel to “administer the programs within the recipient countries”; thus, the Joint Military Advisory and Planning Group was established in Turkey, with over 400 U.S. military personnel assigned by mid-1949 (Appendix 2, p. 4-5). By 1951, this group was renamed the Joint United States Military Mission for Aid to Turkey (JUSMMAT) and became the world’s largest military assistance and advisory group. The number of JUSMMAT personnel reached its peak by 1967, with “more than 3,000 military and 2,000 DOD civilian personnel” (Robey & Vordermark, 2003-2004, p. 3).

The major focus of post-WWII U.S. military assistance, according to DISAM (2015), was to give away surplus war materiel gratis, in the form of grants and aid under the name of the Military Assistance Program (Appendix 2, p. 5). During this era, the U.S. Congress also enacted the European Recovery Plan, an endorsement of the Marshall Plan, which included \$15 billion in loans and grants to 16 European countries in order to help recover their economies, which had been damaged significantly from the war (DISAM, 2015, Appendix 2, p. 6).

In 1949, NATO was established by 12 founding countries, including the United States, with the aim of collective defense. As an outcome of this alliance, NATO members benefited from SA by gaining preferential status and some exclusion from arms

control legislation. Thus, the majority of U.S. military assistance went to NATO members until 1965 (DISAM, 2015, Appendix A2, p. 6). Zanutti (2011) indicated that Turkey joined NATO after having acquired the reputation of being “a reliable and capable ally,” thanks to its participation and merit in the Korean War (p. 38). After joining NATO, Zanutti (2011) suggested, Turkey took advantage of its membership in the alliance to modernize its military with the Military Assistance Program (MAP).

In the late 1950s, U.S. foreign policy broadened and MAP started to include friend nations in addition to allied nations. Combined with the declining surplus of post-war arms stockpiles, changes in U.S. foreign policy and increased self-sufficiency of recipient countries put more emphasis on military sales instead of grants and aid in the 1960s. During the Nixon Administration, various kinds of security-related military and economic assistance programs were organized under the term *Security Assistance* while formalizing the main features of today’s SA (DISAM, 2015, Appendix 2, p. 9). In the 1970s, the U.S. Congress’ persistent request for more efficient management and greater control of SA resulted in the International Security Assistance and Arms Export Control Act (AECA) of 1976 (DISAM, 2015). Since that time, the AECA has provided the governing legislation over SA and has overseen all related activities while defining the eligible countries.

U.S. military assistance to Turkey between 1948 and 1975 totaled more than \$4.5 billion. However, two events during this era damaged the relationship. The first was President Lyndon Johnson’s letter to Turkish Prime Minister Ismet Inonu in 1964, which strongly admonished Turkey not to use any U.S.-supplied equipment in the Cyprus crisis. The second was the U.S. Congress’ embargo in 1975 on military assistance grants and arms transfers to Turkey, which was a response to the Turkish intervention in the Cyprus conflict (Zanutti, 2011, p. 39). The embargo continued until 1978 while critically causing a decrease in operational readiness of the Turkish Armed Forces. In response, Turkey closed all the U.S.-owned defense facilities in the country, except for those with NATO functions, until the end of the embargo (Zanutti, 2011, p. 2). Even though relations normalized with the end of the embargo and the U.S.-Turkey Defense and Economic Cooperation Agreement in 1980, the bitter taste of these events created two new strategic

priorities for Turkey: to diversify arms suppliers and to develop a national defense industry (Zanotti, 2011, p. 3). As an immediate reaction, the Turkish Armed Forces Foundation and many defense enterprises were established to bolster Turkey's national defense industry. Later it was understood that these efforts were not enough alone; therefore, the Undersecretariat of Defense Industries of Turkey was established through legislation with continuous funding out of the general budget (Undersecretariat of Defense Industries, n.d.-a).

In fiscal year 1990, according to DISAM (2015), U.S. Congress terminated MAP funding and collected all related grants, funds, and aids under the Foreign Military Funding Program (FMFP). Soon thereafter, the U.S. Congress upgraded Turkey's status to a mature country in terms of its military's force and modernization level, thus terminating its FMFP with Turkey (Robey & Vordermark, 2003-2004, p. 7). First, all FMFP grants changed into loan-only assistance in 1993; then, all loan-only assistance ended in 1998. The end of the FMFP funding from the United States along with rigorous attempts by Turkey to build up national defense industries caused steep decreases in SA for Turkey. With the goal of being fully self-sufficient and autonomous in its defense industries, Turkey has sought ways to offset co-production and co-development for defense exports—in addition to massive efforts to develop numerous industries (Zanotti, 2011).

Thanks to its historical legacy with the United States, Turkey still considers the United States a preferred supplier for many systems (Zanotti, 2011, p. 28). However, current trends in a recent report by J. Zanotti (2011) from the Congressional Research Service indicated that Turkey no longer solely depends on U.S. materiel:

Turkey's desire to limit its dependence on any one nation or group of nations has led to procurement and industrial cooperation policies that have come into tension with U.S. practices regarding co-production and technology sharing. As a result, Turkey increasingly solicits competitive offers from multiple countries for its defense acquisitions. It seriously considers offers from non-U.S....but that Turkey perceives as being more flexible in negotiations and in sharing expertise, and therefore more helpful in contributing to Turkey's long-term goal of industrial self-reliance....Emphasis on procurement from countries and firms that provide offsets, allow co-production, and issue export licenses at the

bidding stage...has made it more difficult for U.S. firms to obtain contracts. (p. 28)

Parallel to this, the TN's perspective on these issues was cited in the Turkish Naval Forces Strategy 2016 (TNF, 2015) as:

For the first time, a battle ship's full analysis, design, development, and integration were done completely nationally thanks to Genesis Project initiated in 1998 and National Ship (MILGEM) program initiated in 2004. Therefore, retaining these design and ship building capabilities and capacities are crucial to Turkish Navy. With these projects, Turkish Navy aims to support advancement of the combatant shipbuilding industry, to nationally develop technologically and militarily vital systems, and institutionalize these efforts to set up substructure that is needed by national defense industries. Turkish Navy will prioritize transfer of shipbuilding to the national defense industry after the first ship/system is produced and its performance is assured by the Turkish Naval Forces. Collaboration between military shipyards, national industry, and universities will be increased in order to support the efforts of minimizing the dependence on foreign defense industry. (p. 34)

It is important, however, not to forget that until the 2000s, most needs of the Turkish Naval Force systems were satisfied through foreign acquisition by either direct procurement or programs with offsets that included building some of the ships in the TN shipyards. Parallel to this trend, the warfare systems of all ships were acquisitioned from foreign industries until the end of the 1990s. (TNF, 2015, p. 34) Therefore, there are many U.S.-supplied ships and systems existing in the TN that still require life-cycle support transactions through FMS.

Today, key Turkish defense industries have been established and have reduced Turkey's dependence on external sources. Furthermore, Turkey has started to reap the benefits of its resolution to establish defense industries and has even become an exporter for some vital defense articles (Undersecretariat of Defense Industries, n.d.b). The aim of improving indigenous capabilities is not only for new systems but also for the support of existing ones. Every year, exhibitions of imported support materiel have been conducted with the aim of minimizing the dependence on external sources in life-cycle support.

While making every effort to maximize its defense industrial base, Turkey continues to experience the bitter taste of political events over intended arms transfers

from the United States. As a latest example, since 2012, the U.S. Congress has refused to give two Perry-class frigates to Turkey because of the political environment and strong lobbyism. Again, in 2015, the U.S. Congress denied Turkey's request for these ships. This trend of denying ships to Turkey was perceived as a new arms embargo by some of the Turkish media and "would trigger reaction and risk U.S. defense business in Turkey" (Bekdil, 2015). This kind of U.S. political action not only jeopardizes the current relationship but also pushes Turkey to speed up its national ship projects.

In conclusion, Turkey and the United States have a very long relationship in arms transfer. As a NATO member, Turkey has used SA programs to satisfy its security needs. However, politic decisions regarding U.S. arms transfers to Turkey have harmed the relationship to a great degree. Turkey is resolved to build up its own national defense, so it does not experience the "troubling and humiliating conditions of embargo" ever again (Durmaz, 2014, p. 67). These trends in SA and Turkey's sensitivity toward foreign procurement provide a backdrop for the analysis of the Turkish FMS DRP, ROR and SDR transactions.

D. FMS PROCESS

This section provides a brief overview of the FMS program, the stages of the FMS process, FMS case types, and the U.S. Navy's organization for FMS.

1. Overview of FMS Program

The Arms Export Control Act (AECA) of 1976 (22 U.S.C. § 2751) "authorize[d] sales by the United States Government to friendly countries having sufficient wealth to maintain and equip their own military forces at adequate strength, or to assume progressively larger shares of the costs thereof, without undue burden to their economies" (para. 2). The act indicated the rationale for these sales: "It [had become] increasingly difficult and uneconomic for any country, particularly a developing country, to fill all of its legitimate defense requirements from its own design and production base" (para. 3). Contrary to arguments that arms sales create solely a market for the U.S. defense industry, explained Gilman (2014) et al., the main purpose of arms sales is to setup strong

relationships with foreign nations for the United States to pursue its national security strategy and foreign policy goals (p. 3).

All authorizations and appropriations related to SA are provided under U.S. public law. The U.S. Congress, the legislative and overseeing authority, enacts the laws, reviews sale requests, and appropriates funds for SA. The president, chief policy maker of U.S. foreign policy, is responsible for determining which countries and organizations are eligible, entering into contractual agreements with other countries and organizations, and notifying Congress of these contracts. Most of the authority and responsibilities over SA are delegated to the Department of State (DOS) and the Department of Defense (DOD). The DOS is responsible for making a determination for budget requests and sales programs based on a country's size and scope. The DOS also has the authority to approve defense export licenses for U.S. defense industries. The authority for entering into contracts with eligible countries is delegated to the Secretary of Defense. This authority further delegates tasks to the Defense Security Cooperation Agency (DSCA). DSCA executes all SA for the DOD; thus, it directs, administers, and executes the FMS program (DSCA, 2003). DSCA published the *Security Assistance Management Manual* (DOD 5105-38.M) as a principal guide and mandatory reference for all DOD components. The manual provides "guidance for the administration and implementation of security assistance and related activities in compliance with the AECA, the Foreign Assistance Act (FAA), and other related statutes and directives" (DSCA, 2003, p. 2).

Among the programs related to SA, FMS has had a unique key role since it involves government-to-government defense sales established via formal contracts or agreements with eligible foreign purchasers. DSCA (2003) defined FMS as follows:

The Foreign Military Sales (FMS) Program is that part of Security Assistance authorized by the Arms Export Control Act (AECA) and conducted using formal contracts or agreements between the United States Government (USG) and an authorized foreign purchaser. These contracts, called Letters of Offer and Acceptance (LOAs), are signed by both the USG and the purchasing Government or international organization; and provide for the sale of defense articles and/or defense services (to include training) usually from Department of Defense (DOD) stocks or through purchase under DOD-managed contracts. As with all Security Assistance,

the FMS program supports United States (U.S.) foreign policy and national security objectives. (p. 85)

DSCA (2003) referred to Turkey as “FMS Eligible,” and “Excess Defense Articles (EDA) Eligible” (p. 87-96). In addition to defense articles and services, technology must also be allowed for transfer to eligible countries and organizations (DSCA, 2003).

USG conducts all necessary activities related to arms sales with FMS purchaser countries in the same manner it conducts these activities for itself. To avoid passing costs onto the U.S. taxpayer, the USG does not profit from these arms sales but charges administrative fees to the nation purchasing through the FMS. It can be said that the FMS process is conducted on a non-profit basis for the benefit of the purchaser and at no cost to U.S. taxpayers. The USG charges a certain percentage of the total price of the transaction as an administrative surcharge without disclosing the administrative efforts and their actual costs (DSCA, 2003).

The FMS process uses the existing domestic DOD structure (DSCA, 2003). The domestic DOD structure has various players. For this reason, DISAM (2015) outlined, “policies, databases, and organizational elements for support of FMS vary among DOD agencies” (p. 5-1). This complexity makes it is very important to understand the U.S. Navy’s supply system and FMS organization in addition to understanding the FMS process.

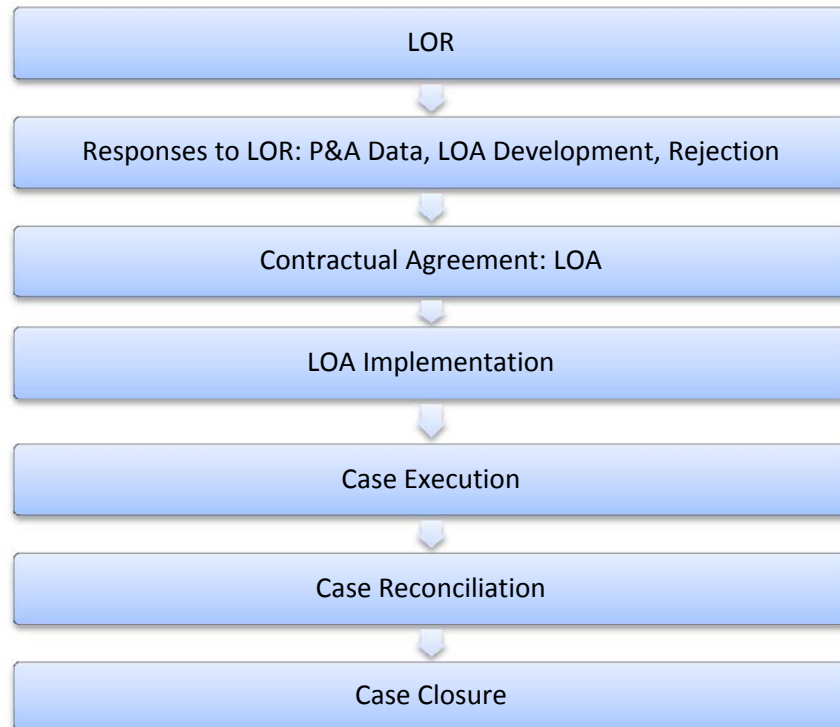
2. Stages of the FMS Process

All acquisition processes, regardless of their origin, begin with requirement development. To fulfill national security needs, countries seek capable suppliers of defense articles and services. If a customer country considers the USG a viable supplier of defense articles or services, the FMS process begins. According to DISAM (2015), during this stage, “ongoing consultations between the customer country and the U.S. representatives” occurs (p. 5-2). The SA organization in Turkey is the Office of Defense Cooperation (ODC)-Turkey. ODC-Turkey plans and executes SA in Turkey, “advising

about modernization, and assisting the U.S. defense contractors working with the Turkish Armed forces” (Robey & Vordermark, 2003-2004, p. 17).

The following subtopics explain FMS stages from beginning to end. Figure 1 illustrates the flow of the stages of the FMS process.

Figure 1. Flow of the Stages of the FMS Process



a. Letter of Request

The Letter of Request (LOR) is the first activity in the FMS process. After the customer country becomes interested in buying U.S. defense articles or services, it may prepare and submit an LOR to the USG. There is no standard format for the LOR, but it is best to sufficiently itemize the customer’s requirements. A purchaser may ask only for information relating to Price and Availability (P&A) Data. Alternatively, a purchaser may request a formal agreement for sales, known as Letter of Offer and Acceptance (LOA). An LOR should be addressed to DSCA and to the implementing agency (IA), a USG organization authorized to receive and process LORs. As an IA, the U.S. Navy

implements and handles thousands of cases for its SA headquarters, the Navy's International Program Office (Navy IPO). Additionally, copies of an LOR, as outlined by DISAM (2015), should be addressed to some key organizations such as the U.S. embassy or DSCA.

b. Responses to an LOR

There are three possible responses from the USG to the customer country: P&A Data, an LOA, or a negative response to the request.

(1) P&A Data

Customers can ask for P&A data from the U.S. government. According to DISAM (2015) P&A data is “a rough order of magnitude estimate reflecting projected cost and availability for defense articles and services identified in an LOR” (p. 5-3). However, it is unacceptable for use in either LOA preparation or a customer country's budgeting activities because it is not an official offer from the USG. The only purpose of this data is to provide information for planning activities. Unless DSCA approves, nonstandard requests are excluded from the response. There is no obligation for the purchaser to buy articles or services after requesting P&A data. As DISAM (2015) described, if the customer country decides to purchase U.S. defense articles and services after examining P&A data, it must submit another LOR for an LOA (p. 5-3).

(2) Reviewing Process and the LOA

Depending on the defense articles and services requested, the USG's reviews' time and extent differs. The IA ensures that the LOR is reviewed by the correct organizations. “To minimize the response time to the customer ... all required reviews occur concurrently” if possible (DISAM, 2015, p. 5-8). Within five days after receipt, the IA validates the LOR by checking the eligibility of the purchasing country and the items requested the suitability of the request processing channels, as well as existing sanctions and the country's overall dependability. A *Dependable Undertaking*, as DISAM defined, occurs when the purchasing government “agrees to pay the full amount of such contract which will assure the USG against any loss; to make funds available in such amounts and

at such times as may be required by the contract (and to cover any damages/termination costs)” (p. 2-16).

Within 10 days after the IA receives the LOR, the IA initiates case development and compiles the LOA data (LOAD) from related organizations. During LOA preparation, the LOAD is applied. One of the major characteristics of the FMS program is its Total Package Approach (TPA) in which all necessary follow-on support materiel and services for fielding and utilizing the system are provided. This materiel includes at least one-year supply of spare parts. The TPA is considered during the LOAD estimation process (DISAM, 2015, p. 5-7).

FMS policy gives the IA between 45 and 150 days after the receipt of the LOR to prepare an LOA offer. This policy timeframe, called an Anticipated Offer Date, is designated according to the assigned group category under which proposed articles or services fall. These group categories are shown in Table 1.

Table 1. Anticipated Offer Date Groups—A Letter of Request to a Letter of Offer and the Acceptance Response Time

Group	Description
A	45 days for Blanket Order LOAs, training LOAs, Cooperative Supply Support Arrangements (CLSSAs), and associated Amendments and Modifications. The IA can change the date to less than 45 calendar days if appropriate.
B	100 days for Defined Order LOAs and associated Amendments and Modifications. The IA can change the date to less than 100 calendar days if appropriate.
C	150 days for Defined Order LOAs and associated amendments that are considered “purchaser-unique” in nature. The IA can change the date to less than 150 calendar days if appropriate. Associated Modifications to this group will be placed in Group B. The IA must identify why the LOA document is “purchaser unique” by selecting one of the below 8 factors: 1. First-time purchase of a defense article or service by an FMS purchaser 2. First-time FMS purchase by a specific country or international organization with limited experience or knowledge of FMS processes/procedures 3. Case requires engineering, system integration, or special acquisition 4. Requested use of the system is different from its use by U.S. military forces (e.g., Navy ship missile to be fired from an Army or foreign country’s helicopter) 5. Detailed release/disclosure coordination required 6. Complex pricing effort required 7. Extraordinary coordination required inside or outside the IAs 8. Other (must be explained by detailed milestone comments in DSAMS)

Adapted from: Defense Institute of Security Assistance Management. (2015). *The management of security cooperation (Green book)* (34.1 ed.). Wright-Patterson AFB, OH. Retrieved from <http://www.disam.dsca.mil/pages/pubs/greenbook.aspx>

When the IA's LOR price estimation meets or exceeds certain dollar thresholds, the IA provides Congressional notification data to DSCA within ten days of LOR receipt. DSCA prepares the notification. These financial thresholds and review periods vary by country, as shown in Table 2.

Table 2. Foreign Military Sales Notification to Congress

<i>NATO Countries, Japan, Australia, New Zealand, Israel, and Republic of Korea</i>	<i>All Other Countries</i>
Reporting Threshold	
<ul style="list-style-type: none"> • \$100M total case value • \$25M major defense equipment (MDE) • \$300M design and construction services 	<ul style="list-style-type: none"> • \$50M total case value • \$14M major defense equipment (MDE) • \$200M design and construction services
Congressional Review Period	
15 days statutory (formal) notification	30 days statutory (formal) notification

Source: Defense Institute of Security Assistance Management. (2015). *The management of security cooperation (Green book)* (34.1 ed.). Wright-Patterson AFB, OH. Retrieved from <http://www.disam.dsca.mil/pages/pubs/greenbook.aspx>

It is very important for all stakeholders to take U.S. Congress' calendar into consideration since it affects plans for key FMS program milestones. Furthermore, DISAM (2015) described, "Congress must be at session at the start of the statutory notification period"; it is possible that the proposed LOA may be rejected by Congress if it "pass[es] a joint resolution" (p. 5-10). Details about congressional notification activities and processes were explained by DISAM (2015) in the *Management of Security Cooperation*, Chapter 5, page 9.

(3) Negative Responses to Letters of Request

Before the formal notification of rejection to the customer, the IA first contacts DSCA about its decision. Then, DSCA coordinates with all related organizations including the Department of State (DISAM, 2015, p. 5-7). Chapter 2.2 of the *Security Assistance Management Manual* covers the negative response protocol (DSCA, 2003).

c. Contractual Agreement: The Letter of Acceptance

According to DSCA (2003), “The LOA is the document used by the USG to sell defense articles, defense services (to include training), and design and construction services to a foreign country or international organization under authorities granted in the Arms Export Control Act (AECA)” (p. 123). An LOA, the document used for all security assistance programs, is also called an FMS case (DISAM, 2015, p. 6-1). . According to DISAM (2015), special types of LOA, such as the pseudo LOA and Building Partner Capacity LOA’s, exists in addition to the standard LOA. DISAM (2015) explains that “Under traditional FMS, an LOA is a bilateral agreement between the U.S. government (USG) and an authorized foreign purchaser. In the LOA, the USG commits itself to provide certain defense items or services and the purchaser commits to abide by specific terms and conditions associated with the sale and to make specified financial payments” (DISAM, 2015, hapter 8, p.1).

In *The Management of Security Assistance* document, DISAM (2015) indicated that “IA must offer an LOA within thirty to ninety days after receipt of an LOR, depending on the type and complexity of the case” (p. 5-3). Unlike the P&A and LOAD price estimates, the prices in the LOA are the “most precise data available at the time the document is prepared” (p. 5-4). The clearer and more comprehensive a customer’s information is in its LOR, the more accurate and complete the pricing and delivery schedules will be in the LOA (DISAM, 2015). In the LOA Standard Terms and Conditions in the , DSCA (2003) stated that “The USG shall use its best efforts to deliver at the estimated price, but that the purchaser is obligated to reimburse the USG for the total cost if it is greater than that price” (p. 458). Further DISAM stated that “The USG will use its best efforts to provide the items for the dollar amount and within the availability cited in AECA Sales Agreement Requirements” (p. 8-4). Under FMS, most USG actions are conducted with “best effort.” After several reviews by the Department of State (DOS) and DSCA’s Case Writing Division at its headquarters— in consideration of policy, legal, and financial aspects—an LOA is offered to the customer country with all authorized signatures for acceptance. Every LOA has an offer expiration date. This expiration date is generally eighty-five days from the IA approval, according to DISAM

(2015), a total of “twenty-five days for U.S. administration process and sixty days for country review” (p. 5-13). This LOA references the LOR and is a formal sales offer from the USG.

Every customer country has its own structure and process for review and acceptance. When the customer country accepts and counter-signs the proposed LOA as well as forwards the initial deposit specified therein, the LOA becomes a formal government-to-government agreement (DISAM, 2015, p. 5-13). During the reviews, both parties must comply with their respective laws and policies (DISAM, 2015). Also, the LOA must be signed by an authorized representative of the customer. The customer country completes necessary *purchaser provided information*, signs the case before the expiration time arrives, and sends the proper amount of signed copies to the IA and the Defense Finance and Accounting Service (DFAS-SCA). Additionally, the customer country sends the initial deposit in U.S. dollars via check or wire transfer, as reflected in the LOA. Without the initial deposit, which is a condition of acceptance, the USG will not implement the agreement. Since the cost and schedule in the LOA are perishable, it is important for the customer country to accept the offer before its expiration (DISAM, 2015, p. 5-13).

The content for every LOA that originates from FMS has a standard set of terms and conditions (T&Cs). DSCA keeps the T&Cs in up-to-date compliance with the most current policies and legislature. Like everything written in the LOA, the T&Cs are applicable throughout the life of the contract (DISAM, 2015). Some of these T&Cs are explained in the following paragraphs.

All items in FMS, will be the standard items that the DOD currently uses, without regard to make or model. This is important because the DOD uses the exact same acquisition and procurement processes and procedures for each FMS case. (DISAM, 2015) This means that the Federal Acquisition Regulation (FAR) and the Defense Acquisition Regulations Supplement (DFARS) clauses apply to FMS. In other words, FMS customers enjoy the same benefits and protection under these legislations while getting the items in the most cost and schedule effective way through competition (DSCA, 2003, Chapter 4). This is why most countries choose FMS. However, the FMS

process also has its shortfalls, especially when the third-party beneficiary concept is considered. When defense materiel is procured for commercial vendors, the FMS process has two different contractual agreements: the contractual agreement between the USG and the U.S. commercial vendors as well as the contractual agreement between the USG and the purchasing country in the form of an LOA. Even though both contracts are signed by U.S. contracting officers, they are governed by different regulations. The procurement contract is governed by the FAR while the LOA is governed by DSCA's (2003) *Security Assistance Management Manual*. These differences create shortfalls in cases of disputes and obstruct pursuing third-party beneficiary rights. This is because the FAR has the full "force and effect" of the law while LOA is an international agreement based on a DOD manual (DISAM, 2015, p. 9-4). As shown in the Trimble Cases, *United Kingdom Ministry of Defense v. Trimble Navigation Ltd.* (2005) and *Secretary of State for Defense v. Trimble Navigation Ltd.* (2007), FMS purchasers have a disadvantage in pursuing judicial solutions for disputes because the USG, not the customer, is the legal beneficiary of the FMS procurement, according to the FAR.

Customer involvement in the FMS procurement process is defined in the DFARS (2005) as a request for a sole-source to participate "in discussions with the industry to develop technical specifications; to establish a delivery schedules; to identify any warranty provisions...; [as well as reviews for] price-performance trade-offs ... [without being informed of] any data, including certified cost or pricing" (48 CFR 225.7304). Nevertheless, the contracting officer determines the role of the customer after consultation with the contractor. Other than the aforementioned involvement, FMS customers cannot exclude firms from the solicitation process, interfere with subcontracts, observe or participate in negotiations between the USG and contractors, give direction about contract terms or source-selection decisions, reject any bid or proposal. According to DFARS (2015), USG's policy is not meant to encourage or commit U.S. firms to FMS offset arrangements, this is up to yet those firms can do as they wish.

The DOD gets the same warranties for FMS customers as it does internally except from when requested with timely notice. According to DISAM (2015), these warranties are used as input to the SDR process and reflected in the cost of the contract (p. 8-16).

Offset costs are also reflected in the total price and credited to the customers FMS funds (DISAM, 2015, p. 20-21).

The USG may attach anti-tamper protection to defense articles sold under FMS to safeguard critical technology. This anti-tamper protection does not alter the form, fit, or function of an article (DISAM, 2015, p. 8-5).

In an LOA, the term “best effort” is cited in many terms and clauses even for the USG obligation for the cost and delivery schedule. DISAM (2015) defined this legal term as

that [which] implies a party’s good faith or intent to achieve a stated future outcome; however, this term also recognizes the potential for other factors to subsequently arise that could preclude the offer from actually attaining the intended goal...Therefore, a party performing under a “best effort” condition will not be considered in default of the contract if the intended performance outcomes are not achieved....In regard to the LOA, this section means that the USG will undertake the execution of each LOA with the intent to deliver within the estimated cost and delivery dates cited in the LOA but the USG cannot promise or guarantee these estimates will be achieved. As such, the purchaser understands and accepts the risk that the USG may fail to meet the LOA cost and delivery estimates. (p. 8-5)

Another important point in the LOA is the cancellation right of the USG. DSCA (2003) described this right of cancellation: “The USG reserves the right to cancel it in whole or in part when determined to be in the USG’s best interest” (p. 132). Moreover, there must be a significant event to “change USG position or decide to cancel” the agreement. In the case of cancellation, the USG assumes responsibility of related costs (DSCA, 2003, p. 132).

d. Implementation and Execution

Once the USG receives the initial deposit from the customer country, the acting IA receives obligational authority (OA), which means there is evidence for case acceptance resulting in the financial authority of IA case managers. Even though there is no standard timeframe for case implementation, it generally occurs within ten to fifteen days. A case manager may issue a case directive—a project directive for the U.S. Navy—which is a document or documents that include logistical and financial implementation instructions. When the customer country processes orders against the case, the

implementation phase ends and the execution phase begins (DISAM, 2015, p. 5-14). During the execution phase of the case, many acquisition, finance, logistics, and training activities happen, depending on the case type and content. FMS cases tend to create thousands of logistical and financial transactions that require data systems for internal control and management. These systems oversee the performance of the cases while reporting the case status to the customer and DFAS-SCA (DISAM, 2015, p. 5-15). According to DSCA (2003), case execution must be in compliance with DOD regulations and procedures. In addition to procurement and acquisition activities, the DOD carries out supply and logistics actions in the same manner that it does internally.

e. Reconciliation and Closure

A successful case closure requires thorough and continuous reconciliation. As mentioned before, a single FMS case can generate thousands of transactions that require aggressive planning and continuous follow-up in order to close them all (DISAM, 2015). Reconciliation, which takes place at least annually, ensures the following: proper accounting of financial and logistical actions, accuracy and thoroughness of data, current schedules, as well as timeliness and completeness of reporting.

According to DISAM (2015), a case can be considered for closure when it is “Supply and Services Complete” and after the following criteria: “[a]ll materiel has been delivered; [a]ll services have been performed; [f]or a blanket order case, no orders have been placed against it for 180 days or more; [t]he purchaser has confirmed that there will be no new orders, [t]he purchaser has not submitted a request to keep the case open; [a]ll supply discrepancy reports (SDRs) have been resolved, [a]ll warranty periods have elapsed” (p. 5-18).

In order to reduce the administrative burden and to release excess funds back to the customer country, DSCA closes cases as soon as possible. When DFAS completes the case reconciliation and closure process, it provides a final bill to the customer. According to DISAM (2015), “an FMS case is considered closed when the purchaser receives the final bill or a final statement of the account” (p. 5-19).

There are two types of case closure: the Accelerated Case Closure Procedure (ACCP) or the non-ACCP. Under the ACCP, cases are closed within twenty-four months from SSC, according to DISAM (2015), “even if there are outstanding unliquidated obligations against the case” (p. 5-19). Inventory requisition is one kind of obligation (DISAM, 2015, p. 5-19). The case is considered *interim closed* when the outstanding unliquidated obligation (ULO) value, that is, “the difference between the estimated final case obligations and the current cumulative case expenditures ... is billed and collected from the customer country and placed into a customer-owned, country level Case Closure Suspense Account” (DISAM, 2015, p. 5-20). A Case Closure Suspense Account ensures that a case remains closed even when there are subsequent disbursements. A case is considered *final closed* when all ULOs are equal to final disbursements. The customer country receives a reimbursement if there are excess ULOs in the final closure (DISAM, 2015, p. 5-20). Although the ACCP is a voluntary procedure, DSCA (2003) indicated that it is mandatory for countries whose programs are financed by the FMFP (p. 254). Today, the ACCP is considered a standard method because most countries use it. According to DSCA (2003), Turkey is considered an ACCP-eligible country (pp. 87-93).

Customer countries that finance FMS programs wholly with their own national funds, as well as those who are ineligible to use the ACCP use the non-ACCP. In order for non-ACCP cases to be closed there should not be any “unliquidated obligations (ULO) against the underlying open contracts. If no contracts apply, then the estimated closure date is normally thirty-six months from the last scheduled delivery or service” (DISAM, p. 5-19). This process is burdensome and time ineffective; therefore, most customers are in ACCP (DISAM, 2015, p. 5-19). Although non-ACCP cases can be reopened after final closer if the final audit finds a lost expenditure, according to DISAM (2015), ACCP cases stay closed since newly discovered expenses can be reimbursed to the CCSA (p. 5-20).

f. Summary

From the requirement determination to final case closure, the FMS process requires a significant amount of activities that require significant effort. Even though it

may seem complicated, the FMS process comprises well-structured, well-documented procedures and a logical timeline. Table 3 summarizes the whole process.

Table 3. Foreign Military Sales Process

Pre-Case Development	Preliminary and Definition <i>Indefinite Time Period</i>	Customer identifies defense capabilities Customer researches options/sources Customer refines requirements Customer and U.S. exchange technical information
	Request <i>Indefinite Time Period</i>	Customer prepares Letter of Request (LOR) Price and Availability (P&A) or LOA Country Team Assessment (CTA) LOR channels of submission Security Assistance survey teams
Case Development	Offer 45-150 days Anticipated Offer Date depends on type and complexity of case; Formal Congressional review is 15-30 days	IA and DSCA receive and evaluate LOR IA develops LOA data (LOAD) DSCA Case Writing Division finalizes LOA Congressional notification, if required, is concurrent with LOA development DSCA-CWD countersigns LOA IA issues LOA to customer
	Acceptance OED is generally 85 days from IA approval in DSAMS (includes 60 days for country review)	Customer signs LOA by Offer Expiration Date Customer sends signed LOA to the IA Customer sends signed LOA and Initial Deposit to Defense Finance and Accounting Service (DFAS-SCA), Indianapolis
Implementation, Execution, and Closure	Implementation 10-15 days average	DFAS issues Obligational Authority (OA) IA issues implementing directive IA activates FMS computer systems
	Execution Longest phase; depends on delivery schedule	Articles/services/training are ordered/contracted Articles shipped and services performed Training conducted IA reports performance to customer/DFAS-SCA
	Closure 2 years from supply/services complete (Accelerated Case Closure Procedures)	IA/DFAS/customer reconcile records IA sends closure certificate to DFAS-SCA DFAS-SCA issues final bill to customer

Source: Defense Institute of Security Assistance Management. (2015). *The management of security cooperation (Green book)* (34.1 ed.). Wright-Patterson AFB, OH. Retrieved from <http://www.disam.dsca.mil/pages/pubs/greenbook.aspx>

3. FMS Case Types

It is crucial to understand the FMS case concept in order to comprehend the overall program. DSCA (2003) defines three types of LOAs: the Defined Order LOAs, Blanket Order LOAs, and Cooperative Logistics Supply Support Arrangement (CLSSA).

a. *Defined Order Case*

The term *Defined Order Case* is used to identify cases in which items or services are explicitly and clearly stated. These cases are generally used for major end items that require item-by-item export and trade security control (DSCA, 2003, p. 124). Items provided under this case type comprise significant military equipment (SME); major defense equipment (MDE), which includes (major end items such as tanks, ships, airplanes, and missiles; and related support for a TPA, explosives, technical data packages, specific services, as well as classified or sensitive materiel (DISAM, 2015, p. 6-2). Except for in TPA support packages, relatively minor, non-SME, or other items that do not require rigorous trade and export controls cannot be provided under this type of LOA (DISAM, 2015, p. 6-2).

b. *Blanket Order Case*

Blanket order cases are used to provide category of items or services without a definitive list of exact item descriptions or quantities. In this type of case, according to DISAM (2015), purchasers set a maximum dollar value and can submit requisitions until funds are depleted (p. 6-2). This feature provides more flexibility but also transfers the responsibility for preparing and submitting requisitions to the purchaser. This responsibility requires the purchaser to be familiar with the requisition procedures and supply system of the United States. A blanket order case is also time effective because it eliminates the need for extensive estimations, conducted requirement under defined order cases.

According to DISAM (2015), the materiel that can be provided under blanket orders include but are not limited to spare and repair parts, support equipment, publications, maintenance, repairables, technical assistance, training, and training aids (p. 6-2). Examples of materiel that cannot be provided under blanket orders include SME, MDE, initial logistics support for end items TPA; classified materiel; commercial-type materiel, including household goods, and sand, lumber, etc.; technical data packages; ozone depleting substances; and explosives including munitions (p. 6-3).

c. *Cooperative Logistics Supply Support Arrangements*

DSCA (2003) described a CLSSA as follows: it “provide[s] for pre-stockage and storage of DOD-stocked non-SME items that are needed and used by the FMS purchaser on a recurring basis” (p. 125). There are two separate LOAs under CLSSA: an FMS Order (FMSO) I case and an FMSO II case. An FMSO I is established up front for the purchase and sustainment of needed items in the DOD supply system. An FMSO II is a blanket order for requisitioning those items (DSCA, 2003, p. 125). When the estimation of the item quantities equals a supply for five months on hand and 12 months on order, the DOD procures necessary augmentation stocks using the investment in FMSO I case to be ready to purchaser withdrawal (DSCA, 2003, p. 232). If the stock levels go down because of the FMSO II requisitioning, DOD components replenishes the stocks by using the funds in FMSO I case. If the IA anticipates that the purchaser the possibility of excess materiel emerges after the review of the demand quantities and stocks, IA contacts with the purchaser about the disposition options. The excess materiel can either be sent to the purchaser or disposed; however, the disposal cost is the purchaser’s responsibility (DSCA, 2003, p. 233).

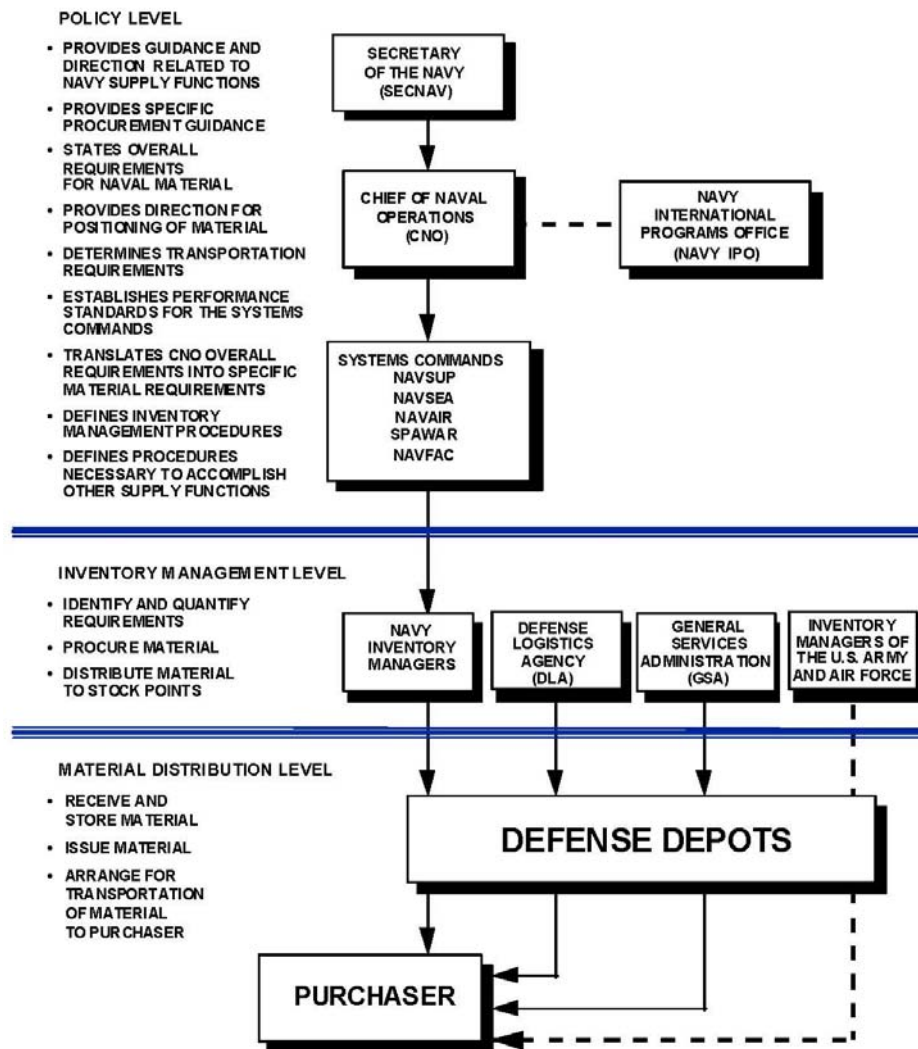
This more responsive case type offers more efficient means of supply support thanks to its equity investment in U.S. stocks. This equity investment is based on previously conducted materiel-need estimations and considerations of financial investment in advance (DISAM, 2015, p. 10-22). Besides its possible effectiveness, a CLSSA creates a financial burden and uncertainty for the purchasers because it requires an up-front investment from the purchaser, which bears the risk of excess inventory.

4. *Overview of the Organization of the U.S. Navy for FMS*

The Naval Supply Systems Command’s (NAVSUP’s; 2011) fifth edition of the *Foreign Military Sales Purchaser Supply System Guide* serves as the primary source of information for FMS customer countries’ navies regarding the U.S. Navy’s structure for the FMS program. NAVSUP (2011) illustrated the U.S. supply systems with sufficient information and guidelines. Figure 2 shows the chain of command for the U.S. Navy Supply System, which uses the same structure to provide support for both U.S. elements

and FMS customers. Thus, it is very important to understand this structure for assessing the effectiveness of the FMS process handled by the U.S. Navy as an IA. The following subtopics cover basic elements of this system and their function in the FMS process.

Figure 2. U.S. Navy Supply System



Source: Naval Supply Systems Command. (2011, August). *Foreign military sales purchaser supply system guide NAVSUP publication 526 (Change 5)*. Retrieved from: https://www.navsupsup.navy.mil/navsup/ourteam/navsupwss/prod_serv/international/FINAL_P526.pdf

a. Overview

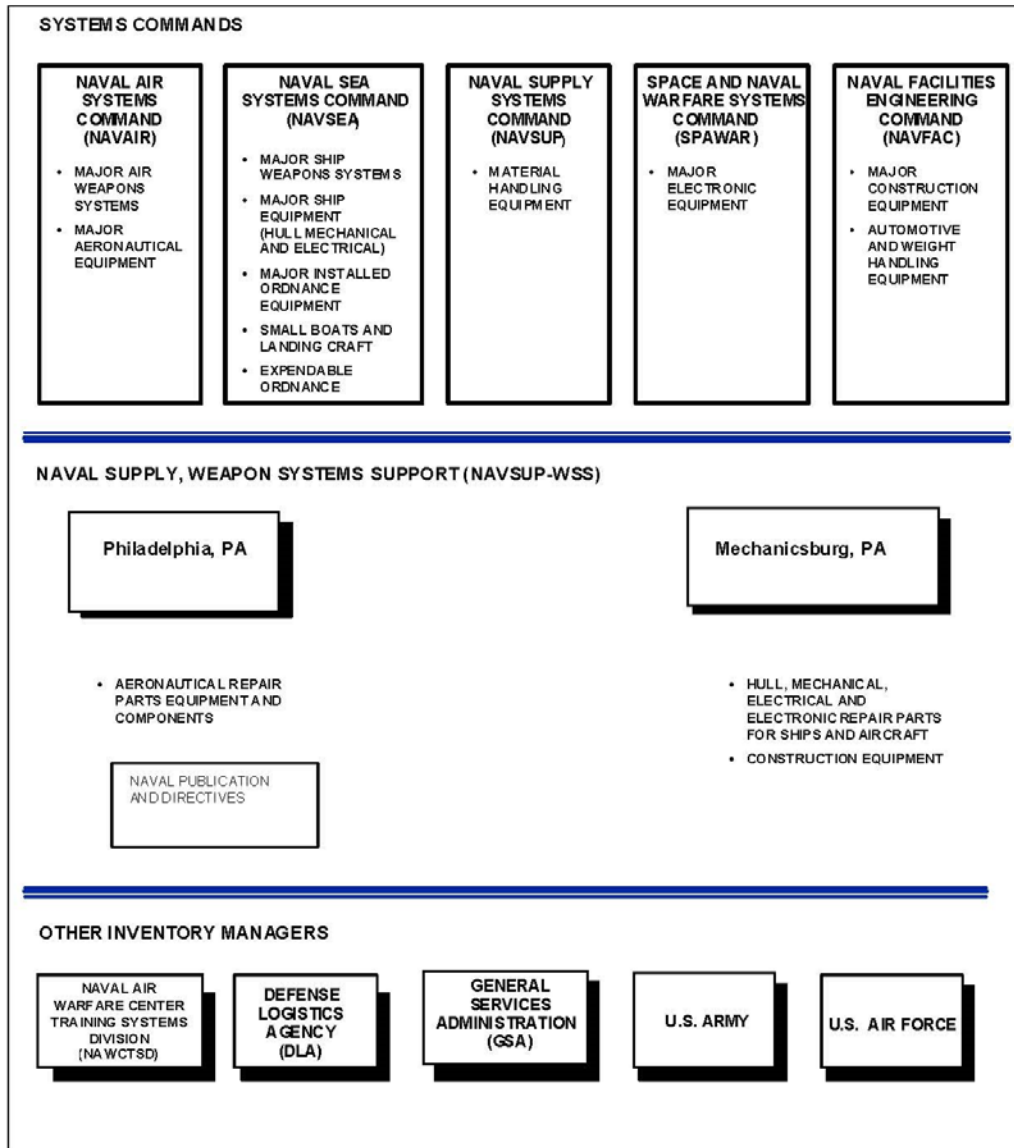
NAVSUP (2011) described the U.S. supply system as the collection of all “activities that identify materiel requirements and that procure, store, and distribute materiel to support its military purchasers” (p. 1-2). These military purchasers include the U.S. Navy’s fleets, the U.S. Navy’s shore activities, other U.S. armed forces, and FMS purchasers. According to NAVSUP (2011), there are three management levels in this system: the policy level, the inventory management level, and the materiel distribution level (p. 1-2). Figure 2 demonstrates the system. The following paragraphs briefly discuss some of the organizations and their roles.

The U.S. Navy’s source for overall guidance and direction is the Secretary of the Navy. The organization that handles LOAs for FMS customer countries is the Navy International Programs Office (Navy IPO), which is under the Office of the Secretary of the Navy (NAVSUP, 2011, p. 1-2). The Chief of Naval Operations (CNO) establishes general policy guidelines about supply support to purchasers (NAVSUP, 2011, p. 1-2). Under the CNO, there are five systems commands, according to NAVSUP (2011) that are responsible for procuring, stocking and supporting certain types of materiel via their separate organizations: the Naval Air Systems Command (NAVAIR), the Naval Sea Systems Command, the Space and Naval Warfare Systems Command, the Naval Facilities Engineering Command, and the Naval Supply System Command (p. 1-3). According to NAVSUP (2011), the Supply Systems Command “has the primary responsibility for running U.S. supply system ...[and] develops and implements supply policies and procedures ... [which] are designed to meet CNO requirements and objectives” (p. 1-3).

At the heart of supply operations, Navy inventory managers (NIMs) identify needs as well as procure items and distribute them to the stock points (NAVSUP, 2011, p. 1-3). NAVSUP (2011) described the NIMs’ mission as “hav[ing] the right item and the right quantity of that item available when and where a supply system purchaser needs it” (p. 1-3). Three categories of NIMs are shown in Figure 3. The first group, over the five systems commands, manages major equipment components while the second group, Navy Supply and Weapon System Support (NAVSUP-WSS), manages, according to

NAVSUP (2011) “repairable items, repair parts, publications, and other consumable materiel used primarily by the U.S. Navy” (p. 1-3) The third group also includes inventory managers for various materiel (NAVSUP, 2011, p. 1-3).

Figure 3. Inventory Managers in the U.S. Supply System



Source: Naval Supply Systems Command. (2011, August). *Foreign military sales purchaser supply system guide NAVSUP publication 526 (Change 5)*. Retrieved from: https://www.navsup.navy.mil/navsup/ourteam/navsupwss/prod_serv/international/FINAL_P526.pdf

Defense depot points reside in the materiel distribution level and receive, store, and issue materiel as well as arrange the transportation to the purchasers. These activities are part of the Defense Logistics Agency (NAVSUP, 2011, p. 1-4). Fleet and Industrial Supply Centers also handle many FMS activities including the following:

ship husbanding and Chandler services for visiting FMS purchaser naval vessels, ... provision of waterfront supplies and services, ... support of the transfer of a U.S. ship to an FMS purchaser's navy[,] including supply assistance and training in the management of the Coordinated Shipboard Allowance List spare parts, [and] provision of training to FMS purchaser vessel crew members in the area of material processing. (NAVSUP, 2011, p. 1-4)

b. Organizations with Major FMS Roles

There are four major organizations that have important roles in the FMS program. These organizations comprise the Navy IPO, the NAVSUP-WSS, the Assistant Secretary of the Navy Financial Management and Comptroller (ASN-FM&C), and the Defense Finance and Accounting Service-Indianapolis (DFAS-JAXBF/IN) (NAVSUP, 2011).

(1) NAVY IPO

As mentioned before, NAVSUP (2011) referred to the Navy IPO as the main organization for the U.S. Navy's FMS program with "overall direction, guidance, and control" (p. 1-4). Additionally, the Navy IPO formulates procedures between other services over logistics support of naval weapons systems and equipment (NAVSUP, 2011, p. 1-4).

(2) NAVSUP-WSS

NAVSUP-WSS is one of the key players in the U.S. Navy's FMS administration and management. According to NAVSUP (2011), NAVSUP-WSS's functions include but are not limited to developing the policies and procedures for the U.S. Navy's security assistance (SA); preparing, administering, managing, and monitoring DRP, ROR, and CLSSA cases and related supply actions; serving as the U.S. Navy's focal point for FMS, introducing all FMS transactions to the U.S. supply system, and conducting review meetings (p. 1-5).

(3) ASN-FMC

U.S. Navy-sponsored cases are financially managed by the ASN-FMC along with DFAS-JAXBF/IN. This activity, according to NAVSUP (2011), includes “control and issuance of obligation authority via Defense Security Assistance Management System (DSAMS) ... [as well as] policy and procedural guidance to the U.S. Navy activities involved” (p. 1-5). In addition, ASN-FMC “has delegated the day-to-day operational fiduciary responsibility to the Navy IPO” (p. 1-5).

(4) DFAS-JAXBF/IN

NAVSUP (2011) described DFAS-JAXBF/IN as a point of contact for FMS customers regarding financial issues that provide “accounting and financial functions on all U.S. Navy FMS program” (p. 1-6). These functions include “performing financial monitoring operations, providing financial status, providing financial accounting throughout the life of the FMS case, executing billing and collection procedures, and case reconciliation and closure” (NAVSUP, 2011, p. 1-6).

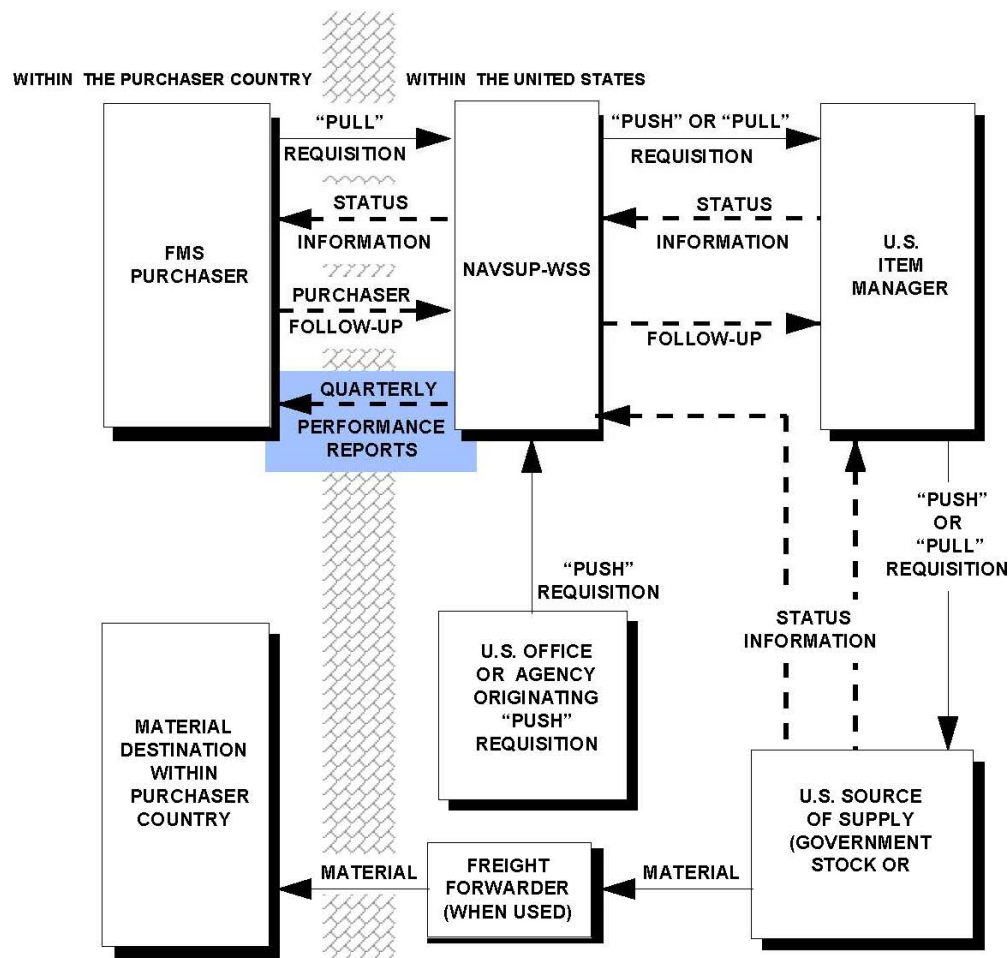
c. FMS Requisitioning in the U.S. Supply System

The U.S. Navy FMS process begins with the purchaser’s submission of an LOR to the Navy IPO. All requisitions for the items or services set in LOAs are sent to NAVSUP-WSS. All FMS transactions use Military Standard Requisitioning and Issue Procedures (MILSTRIP) documents, the standard way to order materiel within the DOD. These documents are the main tools for requisitions, status checks, and follow-on action in the supply system. Requisitioning documents are used for orders, status documents are used for tracking actions against orders, and the follow-on documents are used for finding the current status of orders. MILSTRIP documents are used for one item only without any quantity restrictions. They define the kind of item or service with a unique document number that is trackable throughout the life cycle of the transaction (NAVSUP, 2011, p. 2-1). As shown in Figure 4, there are several ways to start a requisition.

From the supply point of view, there are two types of requisitioning: push and pull cases. When a purchaser identifies the requirements and makes an order, the requisition is called a *pull* since the purchaser pulls the materiel from the U.S. supplies. On the other hand,

when the U.S. supply system prepares the requisition and sends it to the purchaser, it is called a *push* requisition. Stock replenishment for spare parts is an example of a pull. An initial stock requisition, which is sent to a purchaser as a result of TPA is an example of a push since it is prepared by U.S. item managers. Push requisitions cannot be used for services; services can only be asked for as part of an LOA (NAVSUP, 2011, p. 2-1). Specialized requisitioning, such as that of DRP and RoR, is discussed in detail in the following paragraphs.

Figure 4. FMS Requisitioning in the U.S. Navy



Source: Naval Supply Systems Command. (2011, August). *Foreign military sales purchaser supply system guide NAVSUP publication 526 (Change 5)*. Retrieved from: https://www.navsupsup.navy.mil/navsup/ourteam/navsupwss/prod_serv/international/FINAL_P526.pdf

Another mandatory application for FMS transactions is the priority code. The Uniform Materiel Movement and Issue Priority System (UMMIPS) is used by all DOD components to ensure that urgent needs are taken care with priority. This priority system can be applied to requisitioning, issuing, handling, and transporting of an item (NAVSUP, 2011, p. 2-2). For details on how the UMMIPS operates, please see Chapter 8 of DOD 4140.1-R, the Supply Chain Management Regulation and the Instruction 4614.1 from the Office of the Chief of Naval Operations. In brief, the lower the priority number is, the more urgent the need. There are three different priority codes in use: 03-Extremely Urgent (critical), 06-Urgent (not Critical), and 15-Routine. According to NAVSUP (2011), if the purchaser wants “material to be delivered prior to, or later than, the time specified by the UMMIPS priority designator, [it] ... should enter the desired delivery date” (p. 2-11).

There are different means for submitting a requisition: electronic sources, fax, and mail. After necessary reviews and actions, all submissions are recorded in the Management Information System for International Logistics (MISIL). According to NAVSUP (2011), “MISIL is the U.S. Navy’s primary system for processing, controlling, tracking, and reporting Navy FMS transactions” (p. 2-5). All requests are sent to the related item managers, who obtain the materiel from stock or via procurement. Then, they ensure the shipment to the customer (NAVSUP, 2011, p. 2-5).

After submitting the requisition, the purchaser cannot increase the quantity. If the quantity ordered is incorrect or insufficient to satisfy the needs of the purchaser, a new requisition must be submitted under a new document number (NAVSUP, 2011, p. 2-20). Because of changing needs, sometimes purchasers ask for cancellations of either the entire quantity ordered or part of it. If the USG can honor this request, it incurs the costs related to the activities that have already occurred. This cost can be part or full of the cost of the requisition. It is not always possible for the USG to honor a cancellation if the materiel has already shipped. Other than a quantity change or cancellation, the purchaser may also request to change the delivery date or priority. The USG may take action depending on the availability of the materiel (NAVSUP, 2011, p. 2-21). The priority code may be changed in cases of emergency in which the purchaser requires an immediate

remedy. These emergencies must be either operational inability or work stoppage for the purchaser in crucial support or production activities due to a lack of materiel. The priority change will only be enforced for the quantity of the materiel that will resolve the situation (NAVSUP, 2011, p. 2-22).

As mentioned earlier, USG activities and commercial vendors are two sources of supplies for FMS. Materiel is shipped from these points to FMS customers. The shipment occurs at no cost to the purchaser when the delivery point is in the Continental United States (CONUS), so most FMS customers use a CONUS delivery point and a commercial freight forwarding service provider as their representative and shipment delivery point in CONUS. After the materiel reaches the freight forwarder (FF), it is transported to the end destination via transportation arranged by FF. According to standard T&C in the LOA, title (the ownership) of the materiel passes from the USG to the purchaser at the source of supply. This happens regardless of how the materiel is transported unless it is specifically stated in the LOA. Government-furnished or critical materiel, such as ammunition and classified ones are an exception and always transported via USG capabilities or prepaid government bills of lading. These kinds of exceptions and their costs are stated in the LOA (NAVSUP, 2011, p.2-16). In Chapter 2 of NAVSUP's (2011) *Foreign Military Sales Purchaser Supply System Guide*, all requisition activities are discussed in greater detail. Figure 3 outlines the requisition flow in the U.S. Navy's FMS process.

E. FMS DIRECT REQUISITIONING PROCEDURES

One of the main purposes of this research is to analyze the Turkish Navy (TN)'s records for direct requisitioning procedures (DRPs). Therefore, it is crucial to understand all DRPs handled by the U.S. Navy. In the following subparts, these special requisitioning procedures are discussed in detail.

1. Overview

NAVSUP (2011) described DRPs as “designed to simplify supply action on certain categories of items for which the Foreign Military Sales (FMS) purchaser will have a recurring need, such as unclassified spare parts, repair parts, minor components, training films, and publications” (p. 3-1). A DRP is a specific *pull* requisitioning

procedure, which is established as a blanket order case. Like other FMS cases, this process also starts with a request submission of an LOR for a blanket order to the Navy IPO. Every DRP case has a separate LOA that indicates no specific materiel. Since DRP cases are blanket order cases, they have only dollar limits for specific categories of materiel stated in the LOA. These categories may range from support items for weapons systems to publications (NAVSUP, 2011, 3-1).

2. Requisitioning under DRP Cases

DRPs are introduced by the U.S. Navy to increase overall effectiveness of FMS in cost and schedules for specific categories of materiel. By eliminating the need for preparing separate LOAs for each item every time, the requisitioning process becomes simplified with a decreased number of administrative activities. Thus, supply actions become more economic and easy to handle while increasing customer satisfaction. An LOA for DRPs free the purchaser from the limitations of defined order cases and give the purchaser the authority to request whatever materiel it needs and whenever materiel it needs under certain categories within specific dollar limits.

The purchaser must follow the MILSTRIP rules, codes, and forms to make a requisitioning request against the DRP case. Requests should be transmitted electronically to the U.S. Navy, as stated by NAVSUP (2011) in Chapter 2. Electronic transmission is important because it “minimizes processing costs, reduces administrative delays, and improves delivery lead times” (NAVSUP, 2011, p. 3-2).

Requisitioning can continue until the funds in the case are depleted. Since DRPs are used for recurring needs, it is best to immediately replace depleted cases with new ones, so supply support will not be interrupted.

3. Purchasing for DRP

The FMS system categorizes items into two groups: standard and non-standard items. A standard item is an item that has a National Stock Number (NSN) and is currently in use within the U.S. supplies system. A non-standard item “is an item that either is not assigned a stock number, or is identified by an obsolete stock number that

has not been replaced” (p. 3-4). Since standard items are stocked in the U.S. supply system for the use of the U.S. military, a DRP requisition may be satisfied, according to NAVSUP (2011), from stocks only if “it does not interfere with the support of current and anticipated USG requirements” (p. 3-3). Otherwise, the U.S. inventory control point (ICP) conducts a procurement to obtain needed items. Whereas a stocked item’s price is the most up-to-date price, the price of a procured item is the actual cost from procurement. In both cases, the USG adds applicable surcharges to the bill in addition to these prices.

The Commercial Buying Service, part of the Parts and Repair Ordering System (PROS), is primarily used in the procurement of non-standard items. PROS is managed by the Air Force Security Assistance Center. PROS’s program can procure a “wide range of standard and nonstandard supply parts and repair services ... [as well as] specialized engineering and technical services” (p. 3-4). The aim of the PROS program is to provide “last stop shopping” for the purchasers (NAVSUP, 2011, p. 3-4). Regardless of the purchase, all procurements are governed by the Federal Acquisition Regulation (FAR).

Both standard and nonstandard items are purchased at a total cost that cannot exceed the requisition value by specific amounts, as shown in Table 4. The requisition value is the multiplication number of Unit of Issue ordered and the unit price. The unit price of the standard items is its price is the current standard price, whereas it is the estimated Unit Price on the requisition for nonstandard items. Purchase price is the multiplication of number of Units of Issue and the contractor’s price of that unit. This price increase may result from the contractor’s minimum order criteria (NAVSUP, 2011, p. 3-10). Abiding by these price increase criteria, an item manager can buy items at increased prices without informing the customer country. If it is necessary to exceed these limits, item managers must get authorization to exceed the limits from the purchaser (NAVSUP, 2011, p. 3-5).

Table 4. Criteria for Referral of Price Increases to the Purchaser

Requisition Value	Authorized Price Increase
Less Than \$ 2,499	100% or \$2,000, whichever is greater
\$ 2,500-\$ 4,999	100% or \$3,000, whichever is greater
\$ 5,000-\$ 9,999	75% or \$5,000, whichever is greater
\$10,000-\$14,999	50% or \$7,500, whichever is greater
\$15,000 and above	20% or \$8,000, whichever is greater

Source: Naval Supply Systems Command. (2011, August). *Foreign military sales purchaser supply system guide NAVSUP publication 526 (Change 5)*. Retrieved from: https://www.navsup.navy.mil/navsup/ourteam/navsupwss/prod_serv/international/FINAL_P526.pdf

The estimated price for nonstandard materiel can be reached through “either the price on the most recent invoice for the same item, or price information from another document” (p. 3-4-5). Under a FMS DRP requisition for nonstandard items, the purchaser enters the estimated cost by adding 30 percent to the last invoice price. The minimum price for nonstandard item requisitioning submissions is \$160 to for covering material and cancellation cost. NAVSUP-WCC has the right to change the submitted price for nonstandard items to this minimum price upon submission unless it is done by the purchaser (NAVSUP, 2011, p. 3-5).

4. Limitations on DRP

There are three types of limitation for DRP requisitioning: dollar, time, and materiel categorical limitations.

a. Dollar Limitations

One of the critical characteristics of DRPs is the dollar limit of the cases. As it was mentioned before, the purchaser country can request requisitions against a case until it reaches the dollar limit. This dollar limit comes from the fund that is allocated to the case. Under obligational authority, the USG reserves 20 percent of this fund as a safety measure. The purpose of this measure is to ensure that the customer country does not breach the dollar limit. When available funds are depleted, the country’s manager transfers an appropriate portion of the reserved funds to the available account for additional requisition (NAVSUP, 2011, p. 3-6).

b. Time Limitations

There is no general time limitation for requisitioning against the case. However, any specific time limitation can be added if it is requested in the LOR and stated in the LOA by purchaser. Nevertheless, NAVSUP-WCC does not provide the same protections for time limitations as it does for dollar limitations. If there are available funds in the case, NAVSUP-WCC does not automatically stop accepting requisitions against the case even though the time has expired. According to NAVSUP (2011), this is because NAVSUP-WCC wants to “enables the purchaser to make use of all available funds before case closure” (p. 3-6).

There are two time considerations on the applications of DRPs. After implementation, according to NAVSUP (2011), if the case remains idle with no requisitions for 180 days without notification to the Navy IPO of a special situation, “the case will be considered for closure” p. 3-6). The purchaser may submit an amendment to increase the case value for new requisitions, but it is only accepted during the first year of the case. “When the authorized amendment period has passed, and case funds are nearly exhausted,” explained NAVSUP (2011), “the purchaser must submit a LOR for a follow-on case with enough advance notice (normally 120 days) to be sure of continued DRP services” (p. 3-6).

c. Materiel Limitations

According to NAVSUP (2011), materiel that can be requested under FMS DRP include spare and repair parts, minor components, excess defense articles (EDAs), and publications (3-2). Examples of materiel that may not be requested under FMS DRP are: “classified materials and publications ..., technical support services ..., initial provisioning of spare and repair parts applicable to all end items, ammunition and explosive items ..., weapons systems, major end items and major components ..., technical data packages, ozone depleting substances” (p. 3-2-3). In addition to these, purchasers cannot return the repair parts to the United States for repair under this case type (NAVSUP, 2011, 3-3).

If the DRP requisitioning requests include any of the aforementioned restricted items, the USG will return the requests and direct the purchaser toward a defined order case (NAVSUP, 2011, p. 3-3). NAVSUP (2011) mentioned that NAVSUP-WSS may allow the purchasers to order restricted items (other than those aforementioned items) under a DRP if the purchaser “fill[s] the items list with a written request for [a] waiver, with sufficient justification, and a written waiver approval” (p. 3-7). NAVSUP-WCC may give an approval letter after reviewing the list. A prior-obtained written approval is required to submit the purchase order. Otherwise, the request will be rejected (NAVSUP, 2011, p. 3-7).

F. REPAIR OF REPAIRABLES

One of the most commonly used features of the FMS program is the service of repairing unserviceable FMS materiel in U.S. repair facilities. Since another main purpose of this research is to analyze the Turkish Navy’s ROR records, FMS repair service procedures are studied in detail in this sub chapter.

1. Overview

FMS purchasers have extensive U.S. defense materiel in their inventories. During the life cycle of this materiel, failures may happen, rendering it partly or fully inoperable. To maintain operational readiness levels, countries may consider repairing this nonfunctional materiel instead of replacing them with new ones to save time and money. The repair capabilities of the purchasers vary depending on the life-cycle support strategies they prefer. Some may prefer to establish their own repair capabilities; however, it is unfeasible to establish repair capabilities for every item procured via FMS. Thus, they consider FMS repair procedures to get these items repaired. The U.S. Navy’s FMS program provides repair services to FMS purchasers for their unserviceable materiel (NAVSUP, 2011, p. 5-1).

In addition to commercial repair service contracts, the U.S. Navy already has vast repair programs for its own materiel. These programs are at the *depot level*, operated by several U.S. Navy activities. The purchasers can use these capabilities by establishing an FMS case for the U.S. Navy’s repair services. Countries that do not have their own repair

capabilities can use this source as an opportunity to fix their repairable FMS items. Others can use this capability as a supplement to their own services. FMS repair orders are combined with U.S. Navy's repair orders for efficiency and cost savings. The process initiation is same as for other FMS cases. To begin taking advantage of the U.S. Navy's repair services, a purchaser must submit an LOR to the Navy IPO for repair services. It is possible to establish repair cases with or without defined materiel and quantity. For either type, a dollar amount, which cannot be exceeded, is required. All repair-related costs are reflected in the LOA. These billed costs include the actual cost of repair along with administrative and accessorial charges. According to NAVSUP (2011), ROR is a non-standard process focused on "repair and return of the same serial numbered asset" (p. 5-1).

2. Procedures

Electronic management programs, the Security Cooperation Information Portal and WebRoR, are used to process repair requisitions. WebRoR is a mandatory system for all ROR transactions and "emphasizes customer input and interaction with NAVSUP-WSS Repair Managers ... [and] provides FMS purchasers with the resources to submit, track, and maintain FMS repairable programs" (NAVSUP, 2011, p. 5-2). WebRoR can be used by customers after establishing an FMS repair case. Under the FMS repair case, only repair services can be requisitioned. ROR is applicable for those items that the U.S. Navy has repair capabilities. No materiel is allowed to be ordered under this type of case. Similarly, no repair services can be requisitioned under a DRP. A repair LOA can either contain broad wording for repair services or specific definitions of items to be repaired. Regardless of the content, a separate MILSTRIP document number is needed for each item. All of the items are turned over to the U.S. repair facilities for repair. During the return to the United States, all items are processed through U.S. customs. If used by the purchaser, freight forwarders (FFs), play a vital role for the success of RoR as they handle all shipments of items to and from the United States through the custom clearance process. Therefore, purchasers must be sure about whether their FFs use the correct processes and procedures during RoR actions.

a. Steps of ROR Procedures

The following briefly explains the steps of ROR Procedures.

(1) Request

In order to make a request for repair services, an FMS repair case must be established by applying to the Navy IPO. After the case is established, the purchaser can ask for an estimated repair price by submitting a Request for Repair Service (RFRS) via WebRoR. All items' NSN and manufacturer part numbers must be clearly stated. Supplying complete information about the item and failure details affects the success of these procedures. An applicable NAVSUP-WCC repair manager (RM) will receive this request and determine the right repair facility according to case and item type. Based on the last repair on file in the domestic U.S. supply system for the provided NSN and part number in RFRS, the RM estimates the repair cost and sends this estimation to the purchaser via WebRoR. Because of the nature of the estimation process and risk-averse approach of vendors, this price can be updated later (NAVSUP, 2011, p. 5-6).

(2) Response

The RM responds to a purchaser with a decision to approve or reject the request. In the case of a rejection, the RM indicates the reason. If the RM approves RFRS, the purchaser is notified via WebRoR. The purchaser can either accept or reject the updated price according to its price review. To be authorized to return the repairable to the U.S., the purchaser should accept the updated price. This is required to create WebRoR tracking record and important because of its effect on available balance maintained in WebRoR. Every RFRS is considered a purchaser's commitment against its FMS case funds and is tracked financially by WebRoR. When the funds are depleted by the commitments, additional RFRS submissions are blocked. In the case of cancellations or rejections, all committed funds are returned to the purchaser's balance in WebRoR (NAVSUP, 2011, p. 5-6).

A purchaser must respond within 45 days of RFRS approval, after which WebRoR automatically rejects the request. If the service is still needed, a new RFRS must be submitted by the purchaser. After the acceptance of the updated cost, the

customer prepares the repairable materiel along with the required documents for return shipment. There is another time limitation for the returning of the materiel to the U.S. Within 90 days of RFRS approval, the U.S. repair facility assigned must receive the materiel from the customer. Otherwise, the RM will cancel the transaction (NAVSUP, 2011, p. 5-7).

(3) Packaging

Packaging of the returned items should be in accordance with Military Standard 794D, which specifies the correct reusable container for the item. After repair, the USG returns the newly repaired item in the same container. If there is a problem with the container, the USG will fix the container. If there is no container for the item, the USG will provide one. The purpose of these efforts is to send the item back to the customer with the best protection possible. All the costs related to containers will be reimbursed from case funds (NAVSUP, 2011, p. 5-9).

(4) After Receipt of the Item by Repair Facility

When the repair facility receives an item, a detailed inspection determines whether the cost of repair stays within the limit of “the current standard price, or acquisition cost as determined by [the] repair facility” (NAVSUP, 2011, p. 5-8). If so, unserviceable materiel will be repaired in repair facilities and shipped back to the purchaser via an FF or as described in the LOA. If it is determined that the cost of repair exceeds the limit, it is considered beyond economical repair (BER), and the repair facility discontinues the repairing action. Notified by repair facility, RM contacts the customer and inform the current situation with the cost incurred to date, and request disposition instructions. In this case, all costs related to repair work before the item was defined as BER will be billed to the customer. After the RM requests for the disposition instructions from the customer in a BER letter, the purchaser has 45 days to respond about the unrepaired item with one of three possible resolutions: to continue to repair work, to return the item to the purchaser, or to dispose of the item (NAVSUP, 2011, p. 5-7-8). If the purchaser selects the disposal option, the RM will “direct the repair facility to ship the item to the nearest Defense Reutilization and Marketing Service” (p. 5-8). In this

situation, the items will be sold and the proceeds “will be used to help pay for the administrative cost of the disposal action” instead of been sent to purchaser (NAVSUP, 2011, p. 5-8). If the purchaser does not respond in 45 days, the RM will direct the repair facility to ship the item to the FF. This shipment cost will be billed to the customer. During the repair, the latest repair and funding status of the item is tracked by the RM and provided to the customer via applicable WebRoR tracking record.

b. Financial Responsibilities for Loss of FMS Repairables

A repairable item can be lost during any stage of ROR. Policies for financial responsibility differ depending on the situation. In most situations, FMS customers bear the financial responsibility of the lost item. NAVSUP (2011) defined lost as follows: “The location or disposition of the asset is unknown, the repair facility does not have a record of the disposition of the asset, no one knows what happened to the FMS purchaser’s asset” (p. 5-10).

The following explains the responsibilities in three different loss scenarios.

(1) Loss of an FMS Repairable During Transportation

The repairable item may be lost in transit to the repair facility or to the purchaser. In either case, the financial responsibility belongs to the purchaser (NAVSUP, 2011, p. 5-10).

(2) Loss of an FMS Repairable in a U.S. Repair Facility

Repair action takes place in either a U.S. Navy facility or a commercial facility. If the item is lost in the U.S. Navy repair facility and the purchaser submits SDR with appropriate documentation, the USG will credit the value of the item to the purchaser. However, if the item is lost in a commercial facility, the purchaser will bear the financial responsibility, as outlined in the terms of the LOA. The USG may resolve this situation with a commercial contractor, but there is no guarantee (NAVSUP, 2011, p. 5-9).

(3) Disposal of an FMS Repairable by a U.S. Repair Facility without the Will of the Purchaser

An FMS repairable can be disposed without the approval of purchaser. In this situation, the purchaser must submit an SDR. The responsibility will depend on the reason for the disposal. The USG, according to NAVSUP (2011) “will initiate an action to determine the reason for the disposal” after receiving the SDR (p. 5-10).

If the disposal happened due to an error caused by a commercial repair facility, the purchaser assumes the responsibility as in a loss from a commercial facility. If the item was disposed of as a result of “the action or inaction of the USG,” then the USG will credit the value of the repairable to the purchaser (NAVSUP, 2011, p. 5-11). The USG also credits the purchaser if the item disposed in a U.S. Navy facility without approval of the purchaser (NAVSUP, 2011, p. 5-11).

For the aforementioned situations, an SDR must include documentation that proves receipt of the item from the repair facility and be submitted within one year of the repair bill.

3. Limitations on ROR

There are three types of limitations: custom, time, and materiel.

a. Custom Clearance and Licensing

All items sent to the United States must clear customs. This can happen with or without a license depending on an item’s classification. Classified items require a license and approval from the DOD’s Directorate of Defense Trade Control while unclassified are exempt, according to 22 CFR section 123.4 (a) (5) of the International Traffic in Arms Regulations. This license is required even if classified items are repaired in a third country such as Canada. The approval process involves obtaining different types of forms and clearances, as explained by NAVSUP (2011) in Chapter 5, Section 0502.

b. Time Limitations

Time limitation rules are the same as with DRP. Other than the required response times during the ROR requisition, there is no general time limitation for the repair case.

Even though the purchaser may require a specific time limitation for the case, the USG will continue to accept ROR requisitions if there is enough funds in it. This application is conducted with the same manner as in DRP cases (NAVSUP, 2011, p. 5-9).

The only time consideration is the 180-day rule for idle cases. According to NAVSUP (2011), after one year following the implementation of the case, the Navy IPO will consider closing all idle cases with no requisitions for 180 days it has had no notification from the purchaser (p. 5-9).

c. Materiel Limitations

Items included as part of any U.S. Navy's depot level repair program can be repaired under ROR. Other items may be repaired under ROR after the RM ensures that the U.S. repair capability exists and that the purchaser reimburses all the costs associated with the arrangement of this repair. In addition, most consumable items are not usually accepted for repair. However, when a purchaser establishes an RFRS for a consumable item, NAVSUP-WCC's RM will check the standard price of the consumable item. It must be worth at least \$5000 to initiate action to find a repair facility and obtain a repair price. Even after it is found eligible, there is no guarantee that the consumable items will be accepted for repair (NAVSUP, 2011, p.5-9).

G. SUPPLY DISCREPANCY REPORTS

Among all the FMS related issues, discrepancies take the most attention because of the dissatisfaction and frustration they cause customers. . NAVSUP (2011) asserted that because the U.S. supply system deals with such a high magnitude of supply operations, it makes many errors while handling FMS operations every year (p. 8-1). In cases of discrepancy, the purchaser must submit a Supply Discrepancy Report (SDR) as a formal request of correction.

The following subsections explain the type of discrepancies, the discrepancy reporting process, as well as procedures and limitations on SDR submissions.

1. Types of Discrepancy

There are five different discrepancy types under which each discrepancy report must fall: shipment, packaging, billing, and financial discrepancies, as well as quality deficiency reports (NAVSUP, 2011, p. 8-1).

a. Shipment Discrepancies

NAVSUP (2011) provided two categories of shipment discrepancies: carrier and shipper (p. 8-2).

(1) Carrier Discrepancies

Carrier discrepancies happen when the quantity or the condition of the received materiel, that the purchaser receives, is different from the Bill of Lading or the Freight Bill. There can be a shortage in quantity or damage on packages or loose freight after the materiel has shipped from the U.S. facility. As mentioned before, the title of the materiel passes to the purchaser in the source of supply. Therefore, the USG is not responsible for carrier discrepancies. These discrepancies are not covered under the SDR and should be resolved with carrier. There are two carrier types for the transportation of materiel: commercial carriers or the U.S. Defense Transportation System (DTS). Therefore, claims should be initiated against either commercial carrier or DTS. For commercial carriers, the purchaser must resolve discrepancies through its contract with the carrier (NAVSUP, 2011, p. 8-1). For DTS, the USG initiates a claim against the carrier without assuming any responsibility of replacing or repairing the discrepancy. The USG “either provides proof of shipment of materiel to the FMS purchaser or ensures that any credit due is processed to the purchaser’s account” (NAVSUP, 2011, p. 8-2).

(2) Shipper Discrepancies

Shipment of the materiel occurs at the source of supply. The shipper can be either the USG depot or a commercial vendor. However, in both cases, the responsibility of the shipment belongs to the USG. Therefore, the discrepancy claims addressee should be the USG. Even though “there appears to be no difference between the quantity and condition of materiel received and the quantity and condition shown on the bill of lading or freight bill”

in the shipper's discrepancies, the purchaser may receive damaged or wrong items or a different number of items than expected. While the USG is responsible for most discrepancies, some may be occur because the purchasers provided the wrong coding in the MILSTRIP documents. These types of flaws occur especially in the selection of substitute options and quantities for the item. The purchaser may or may not want to accept substitute items or unit of issue pack quantities instead of exact ones as outlined in the documents. If the purchaser mistakenly provides the wrong codes, the purchaser will be unsatisfied with what it receives. In this situation, the responsibility falls on the purchaser (NAVSUP, 2011, p. 8-2).

b. Packaging Discrepancies

Purchasers may receive damaged items because of the item's "improper preservation, packing, marking, or unitization" (NAVSUP, 2011, p. 8-3). These discrepancies are explained in Chapter 8 of NAVSUP's guide.

c. Billing Discrepancies

The materiel may be "omitted from, incorrectly reflected, or duplicated on the FMS Billing Statement or FMS Delivery Listing," even though it is received exactly as stated in LOA." When a billing discrepancy occurs, the purchaser must ensure that NAVSUP-WSS receives a related SDR "within one year from the date of billing shown on the applicable DD Form 645, FMS Billing Statement" (NAVSUP, 2011, p. 8-4).

d. Financial Discrepancies

Discrepancies over "either administrative charges or accessorial surcharges applied to FMS transactions" are considered financial discrepancies. These charges can be found on page 2 of the LOA. "Packing, Crating, and Handling (PCH) charges,...[i]nland, ocean, and air transportation charges,...[p]ort loading and unloading charges" are some examples (NAVSUP, 2011, p. 8-4).

e. Quality Deficiency Reports

An FMS item may have a defect that “limits or eliminates the usefulness of” it (p. 8-5). This kind of deficiency is called a *product quality deficiency*. This defect can be found in “design, specification, materiel, manufacturing, and workmanship” (NAVSUP, 2011, p. 8-5). When the purchaser realizes that “any item which does not meet form, fit, or function, or any new item which does not work upon receipt/installation, or any repaired item which does not work upon receipt from the repair activity,” it should submit a Quality Deficiency Report (QDR) (NAVSUP, 2011, p. 8-8). For the defective repairable that returned to the purchaser from a repair in a U.S. repair facility with a problem, the purchaser may prepare QDRs for improper repair.

2. Discrepancy Reporting Process and Procedures

It is crucial for the purchaser to process discrepancies in the right way, as explained in all governing documents. When the problematic issue is not resolved for any reason, it may cause great dissatisfaction and frustration for the customer. One of the obstacles for resolve discrepancies is being able to submit a correct SDR. Incorrect SDR submissions cause not only a missed opportunity to correct the problem but also an administrative and financial burden. A misinterpretation is the most probable cause for a discrepancy. If the requisition and delivery instructions are not clear enough on the LOA, they can be misinterpreted by the U.S. supply system, which causes an overall decrease in quality and effectiveness of the FMS process. This is also the case for the SDR submission process. Without a thorough examination of the possible problems, the purchaser may decide that there is a discrepancy when really there is not. This kind of situation may occur for one of the following: inefficient communication between the purchaser and the FF, a partial shipment, a consolidated shipment, misunderstood shipment documentation, a quantity difference due to the units of issue, or receipt of a substitute item. Therefore, the purchaser should be meticulous in communicating with its FF and with all shipment tracking and transaction-related documentation (NAVSUP, 2011, p. 8-6-8).

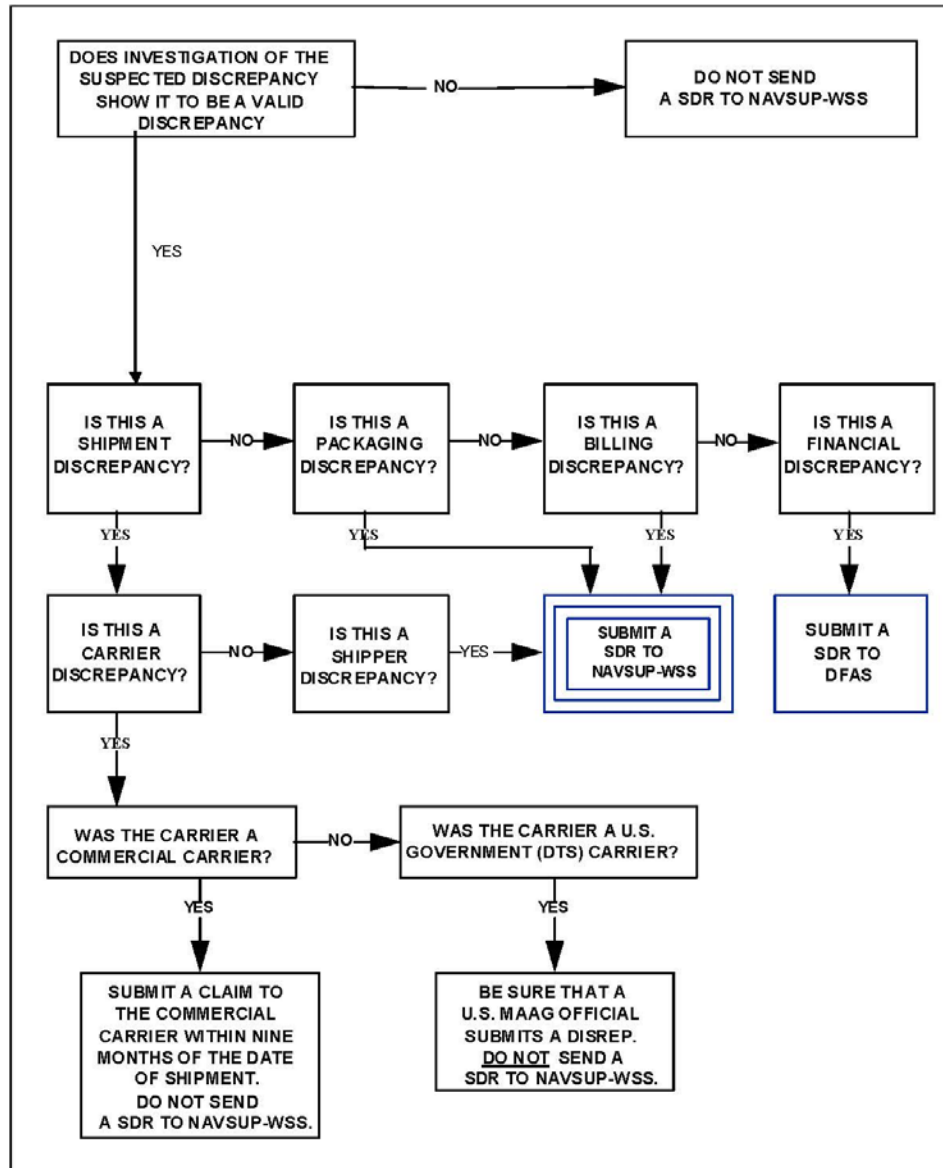
The following subtopics explain the SDR process in brief.

a. Submitting an SDR

A thorough investigation is of a great significance for determining both the existence of the discrepancy and the responsible party. After examining all possible factors that created the discrepancy, the purchaser initiates an action to resolve it with the responsible party. The responsibility may fall on the USG, the FF, or the purchaser. If the purchaser determines that the USG is responsible for the discrepancy, the purchaser must prepare and submit an SDR electronically with supporting information and documentation. Financial SDRs should be addressed to DFAS-IN/JAXBF, while all other types should be addressed to NAVSUPWSS (NAVSUP, 2011, p. 8-6-8). NAVSUP (2011) emphasized that when discrepancies occur after shipment from a U.S. facility, they are not the responsibility of the USG—since the title passes to the purchaser at the source of supply (p. 8-8). The only exception to this is for billing discrepancies (NAVSUP, 2011, p. 8-6-8). Moreover, the shipment date is the applicable date for considering the shelf-life of discrepancies. If the materiel was acceptable with enough shelf life on the shipment date, the purchaser should not submit an SDR. Figure 5 shows the logical diagram of the SDR process. Chapter 8, pages 10-21 of NAVSUP's (2011) guide explained in detail how to complete an SDR form.

To avoid misinterpretation, it is important to determine the type and category of the discrepancy. Categories of discrepancies are briefly mentioned in the following subtopic.

Figure 5. Decision Flow Diagram for SDR Submission



Source: Naval Supply Systems Command. (2011, August). *Foreign military sales purchaser supply system guide NAVSUP publication 526 (Change 5)*. Retrieved from: https://www.navsupsup.navy.mil/navsup/ourteam/navsupwss/prod_serv/international/FINAL_P526.pdf

b. Categories of Discrepancies in SDR

According to NAVSUP (2011), there are ten different discrepancy categories that should appear on front of the SDR.

(1) Condition of the Materiel

In this category, after shipped from parcel post, received materiel should be either “in a condition other than the condition shown on the release/receipt document ... [or] with insufficient shelf-life remaining at the time of shipment ... [or] in damaged condition” (NAVSUP, 2011, p. 8-4-5).

(2) Supply Documentation

In this category, the purchaser receives materiel “with no supply documentation, illegible supply documentation, or incomplete supply documentation” (NAVSUP, 2011, p. 8-5).

(3) Misdirected Materiel

According to NAVSUP (2011), “This category covers materiel that has been addressed to the wrong activity” (p. 8-5).

(4) Overage/Duplicate Shipment

In this category, the purchaser receives more materiel than requested because of either duplicate shipment or “incorrect item count within a container, box, or package.” If the excess materiel is caused by an incorrect item count, the purchaser may not understand the quantity difference between the transportation document and the real materiel until it opens the shipping container and checks the contents. Duplicate shipments are realized as soon as the item is received because the item is either sent in a consolidated shipment or separately with documentation (NAVSUP, 2011, p. 8-5).

(5) Packaging Discrepancies

According to NAVSUP (2011), if an item is damaged due to packaging defects, the purchaser should claim a packaging discrepancy (p. 8-5).

(6) Product Quality Deficiency

NAVSUP (2011) refers to this category of discrepancy as: “a defect that limits or eliminates the usefulness of an item ... [which] includes defects in design, specification, materiel, manufacturing, and workmanship” (p. 8-5).

(7) Shortage of Materiel

In this category, the purchaser receives less materiel than ordered. This occurs when there is either a short count within the received container or non-receipt of the materiel whatsoever. The short count type cannot be realized until the purchaser opens the container and checks the materiel (NAVSUP, 2011, p. 8-5). For non-receipts, the purchaser “must provide documentation from ... [its] freight forwarder showing that the freight forwarder has not received any materiel against the requisition document number or Transportation Control Number (TCN) that applies” (NAVSUP, 2011, p. 8-5).

(8) Item Technical Data Markings

In this category, the purchaser receives the item with “name plates, log books, operating handbooks, and special instructions are missing, illegible, or damaged ... [or] missing or incomplete precautionary and operational markings, inspection data, operating data, and warranty data” (NAVSUP, 2011, p. 8-5).

(9) Wrong Item

In this category, the purchaser receives a different item than requested. Substitute item receipts are not considered discrepancies unless explicitly stated in the LOA that the purchaser will accept it. This situation is explained by NAVSUP (2011) as follows:

A substitute item is one that is authorized for issue instead of a standard item with similar characteristics. Such an item may be issued when the item ordered by the purchaser is not readily available. A substitute item may be unacceptable to the purchaser if it is not interchangeable with the item that was ordered. An interchangeable item is one that has the same physical and functional characteristics as the item ordered. An interchangeable item can be exchanged for the item ordered with little or no adjustment or alteration and little or no loss of operational efficiency. (p. 8-5)

(10) Other Discrepancies

If any discrepancy “includes the receipt of damaged materiel that was not shipped by parcel post ... [or] that does not fall into any of the other nine categories of discrepancies described above,” considered in other discrepancies (NAVSUP, 2011, p. 8-5).

c. Actions After Submitting an SDR

NAVSUP-WSS records all SDRs upon receipt and informs the customer about the receipt of the original SDR (NAVSUP, 2011, p. 8-19). To determine the cause and responsibility, NAVSUP-WSS collects all necessary information from related organizations. Because this information-gathering activity takes time, after the acknowledgement of the receipt of the SDR, it requires a 90-day wait time for the purchaser to send an SDR follow-up. An SDR is not a MILSTRIP document; therefore, the purchaser should not submit a MILSTRIP follow-up for SDRs. The proper way to follow-up is to send a letter or message to NAVSUP-WSS (NAVSUP, 2011, p. 8-22).

After information gathering and examining of the cause, if the USG determines that it is responsible for the discrepancy, “it will either take corrective action or make an adjustment to the purchaser’s account” (NAVSUP, 2011, p. 8-8). While waiting for further disposition instructions from NAVSUP-WSS, discrepant materiel should be stored by the purchaser (NAVSUP, 2011, p. 8-19).

The purchaser may be asked to send the discrepant materiel to a U.S. supply activity by NAVSUP-WSS. Upon receipt of the materiel with proper shipping documents, NAVSUP-WSS will initiate action to reimburse related shipping costs to the purchaser’s account (NAVSUP, 2011, p. 8-19). Return of the discrepant materiel may vary depending on the transportation selected by the purchaser. NAVSUP (2011) provided detailed information for this process in Chapter 8, page 23 of its guide. Because of the high volume of bureaucracy and paperwork, reimbursement of the shipping cost may take a very long time, which can create frustration and an administrative burden. To improve this process, the U.S. Navy encourages customers to use a commercial Internet-based system for the SDR return process (NAVSUP, 2011, p. 8-23). NAVSUP (2011) asserted that this application can reduce the return process up to 180 days (p. 8-23). A cost-benefit analysis and the effectiveness of this application are outside the scope of this research.

After negotiation over corrective action against the QDR for improperly repaired or defective repairables, the USG can request that the purchaser return the materiel for

further repair in a U.S. repair facility along with documents proving the improper repair. Being sure on the cause and evidence of the discrepancy is very important because the purchaser will be responsible for all associated costs for diagnostic-related repair work if it is concluded that the defect was not caused by improper work (NAVSUP, 2011, p. 8-22). If there is an urgent need for the materiel, the purchaser may request for a prompt handling of the discrepancy. According to NAVSUP (2011), the USG “will make every effort to expedite such requests” (p. 8-22). This means that prompt handling is not guaranteed.

All actions for materiel, billing, and materiel adjustments against SDR claims are recorded and reported to the customer with an *FMS reply listing to purchaser requests for adjustments* by DFAS-IN/JAXBF. This listing is also sent to customers attached to their FMS Billing Statement in addition the copy ones that are sent separately for each FMS case that has SDR actions (NAVSUP, 2011, p. 8-19).

d. Reconsideration Request and Contest to SDR Responses

The purchaser may request reconsideration if it receives an unsatisfactory response to its discrepancy report. The purchaser has 45 calendar days to submit its reconsideration request after the SDR reply date. In the reconsideration request, an appropriate explanation and supporting documents should be provided. After reviewing these, the U.S. supply system will provide a decision for either corrective action or rejection. For a rejection, the purchaser will receive an explanation (NAVSUP, 2011, p. 8-26-27). If the response for reconsideration is unsatisfactory for the purchaser, the next step is contesting the decision. To better support its stance, the purchaser should add all new explanations and documentation to the request to contest the SDR. Again, the purchaser has 45 calendar days to submit its request to contest the SDR after the response for its reconsideration request (NAVSUP, 2011, p. 8-27).

3. Limitations on SDR Submissions

There are three different types of limitations on SDR submissions: dollar, time, and categorical limitations.

a. Dollar Limitations

There is a minimum dollar value for SDR submissions in order to be processed. Regardless of the type of discrepancy, the total dollar amount of the discrepancy must be equal to or greater than \$200. NAVSUP (2011) indicated that submitting all SDRs, no matter the value, is beneficial for documenting the problems with the system (p. 8-9).

b. Time Limitations

According to standard T&C in an LOA, the purchaser has one year to submit an SDR after the title transfer during the shipment. When the purchaser does not receive the entire unit of issue of materiel, the one-year limit starts with the date of either the title transfer or billing, whichever date is later. All SDRs that are submitted after this one-year period are rejected without any further review (NAVSUP, 2011, p. 8-9). When the purchaser uses an FF for handling and shipping the materiel, the FF activities may take a long time, which decreases the purchaser's time to report discrepancies. The purchaser must be careful about this situation and may add a clause to its contract that authorizes an FF to submit SDRs on its behalf (NAVSUP, 2011, p. 8-25-26).

There are two exceptions for this time limitation: "unusual circumstances involving latent defects [and] time limits for reporting deficiencies related to contractor warranties defined in individual contracts and/or warranty clauses" (NAVSUP, 2011, p. 8-10). The following explains these exceptions.

(1) Latent Defects

Some materiel has manufacturing flaws that cannot be found by physical or other examination but are discovered during first use. Because some materiel is requisitioned for stocking purposes, sometimes their defects are not recognized until after the one-year SDR submission limit. When this happens, NAVSUP-WCC accepts SDR submissions even though the time limit has expired (NAVSUP, 2011, p. 8-10).

(2) Warranties

If there is a contractor warranty that covers the item, this warranty time limit will be considered instead of the one-year submission limit regardless of the length of the

warranty. All warranty-related documents must be submitted with the SDR. Normally, contractor warranties are only supplied for procured items, not U.S. stock items (NAVSUP, 2011, p. 8-10).

c. Categorical Limitations

Submission addresses of the financial and carrier discrepancies are limited. Financial SDRs should be submitted only to DFAS-IN/JAXBF, while carrier SDRs should not be submitted at all (NAVSUP, 2011, p. 8-10).

H. ALTERNATIVE METHODS

There are various programs and organizations through which materiel and services can be obtained as an alternative means to FMS, DRP, and ROR. These include Direct Commercial Sales (DCS), the Defense Logistics Agency (DLA) Disposition Services, World Wide Redistribution Services (WWRS), and the Repairable Item Replacement Option (RIRO). In this section, these programs and organizations are briefly explained.

1. Direct Commercial Sales

DCS is the other way to obtain U.S. defense articles and services in addition to FMS. Under DCS, the purchaser countries enter into business relationships with U.S. commercial vendors without any USG involvement. The USG has no preference between FMS and DCS. Both programs are considered fundamental foreign policy tools for the USG. Furthermore, it is also an option to use a combination of both programs for procurement. For example, sustainment support for FMS items can be acquired via DCS. Most U.S. defense articles can be obtained through DCS. Some items are categorized as FMS-only; therefore, those items cannot be procured under DCS. Also, U.S. commercial vendors must have arms export licenses in order to sell defense materiel to other countries. For DCS, all administrative efforts are performed by the purchasers. Both FMS and DCS have some advantages and disadvantages that the purchaser should consider during the selection process (DISAM, 2015, Chapter 15). Many details and consideration about the DCS are outside the scope of this research. Chapter 15 of DISAM's (2015)

publication clearly explained the characteristics of DCS. See the Appendix for potential advantages and considerations of DCS (Table 5).

2. DLA Disposition Services

According to DISAM (2015), DLA Disposition Services primarily provide a disposal service for excess DOD materiel. The organization aims to “maximize the reuse of excess property” (p. 10-29). FMS purchasers are some of the many organizations and agencies that can buy this property. After the demilitarization of the excess items, DLA Disposition Services put the items for screening for 42 days. During this screening period, one of the eligible parties may buy the materiel. If materiel is not purchased, it is liquidated in other ways or destroyed. The condition of the materiel varies from new to scrap. The condition is the measurement of the price. Administrative charges are applied to the materiel prices. All materiel is sold “as is, where is” (DISAM, 2015, p. 10-29). No DLA repair or overhaul is available for this materiel. Therefore, the purchasers must be careful about its condition. The preferred method for buying this materiel is to establish a blanket order (DISAM, 2015, p. 10-29). DISAM (2015) stated that interest in this method of buying U.S. materiel has increased (p. 29).

3. WWRS

Under the WWRS program, FMS countries can sell their excess spare parts and support materiel bought under the Arms Export Control Act (AECA) to other FMS countries. This program aims to redistribute this excess materiel by creating a virtual warehouse through which FMS countries can list their wares. Without seeing each other’s identification, buyers and sellers conduct the transactions. An LOA is used as the authority for the purchase. When the item is bought, the seller is required to send it to a U.S. location. The title passes to the USG with the receipt and inspection of the item. After sanitizing the materiel, it is shipped to the buyer, and the title passes with shipment. This ensures that the transaction does not violate any “third-country transfer regulations” (DISAM, 2015, p. 10-32).

4. RIRO

The U.S. Navy's repair and replace program, RIRO, is an alternative repair procedure to ROR. Basically, RIRO is a procedure that can be applied to CLSSA cases (NAVSUP, 2011, p. 4-8). Instead of sending unserviceable materiel to the United States for repair under ROR procedures, the purchaser acquires the ready-for-issue materiel from U.S. stocks and, then, sends the unserviceable materiel for repair. After repair, the items are stocked in the U.S. stocks. If the item is unrepairable, the purchaser is charged the full price of the item sent (DISAM, 2015, p. 10-28). This program is restricted to U.S. Navy-managed maritime and aviation items. As in all CLSSA cases, an equity investment is required. In cases of discrepancy, an SDR should be submitted instead of a QDR (NAVSUP, 2011, p. 4-13).

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III. ANALYSIS OF U.S./TN FMS PROCEDURES' TRANSACTIONS

A. INTRODUCTION

This chapter provides information about the Turkish Navy's FMS DRP, ROR, and SDR transaction records' data, explains how the analysis was conducted, and shows results of the analysis. This chapter begins with a brief summary of the data, statistical methodology, the limitations, and the analysis. Then, this chapter continues with an analysis of each dataset. The last section presents the result of the analysis.

B. DATA SUMMARY

In this research, three datasets were obtained from the Turkish Navy (TN)'s Foreign Procurement Department:

- DRP transaction records between 2009 and 2015
- ROR transaction records between 2007 and 2015
- Discrepancy records, including SDR and QDR, between 2010 and 2015.

1. DRP Data

The DRP data include the transaction records of the TN between 2009 and 2015. The raw data, obtained from the TN's Foreign Procurement Department, have 14 different columns for transactions: obligation date, shipment date, established date, document number, suffix, transaction quantity, unit of issue, group and class, case, unit price, extended amount, latest status code, priority, and transaction control number. Figure 6 shows a sample from the data. The DRP data were provided only for statistical analysis purposes; therefore, they do not have the materiel's national stock numbers or any other specific information for materiel use.

The time interval between establishment and shipment dates, the transaction quantity, unit price, extended amount, priority, and the latest status codes were used during statistical analysis.

Figure 6. Sample Rows and Columns from the DRP Data.

OBL DT	SHP DT	ESTBL DT	DOC NBR	SFX	TRAN QTY	UI	Group/Class (NSN)	CASE	UNIT PRICE	EXT AMT	LTST STS CD	PRTY	TRN CTRL NBR
3/8/2009	3/29/2009	3/8/2009	ABC1234	C	5	EA	1234	ABC	\$5.00	\$25.00	AB	6	ABCDEFG
4/6/2010	4/25/2010	4/5/2009	DEF1234	D	10	EA	5678	ABC	\$10.00	\$100.00	AB	3	HIJKLMN

Note: This data sample is provided to illustrate the original data. None of the content is real.

2. ROR Data

The ROR data include the TN's historical transaction records for ROR. It is understood that the data were gathered according to the end date of transactions. The data start with the transactions that ended in 2010. However, it includes many transactions before 2011. This fact was considered especially during analysis of transaction time. The raw data, obtained from the TN's Foreign Procurement Department, have 14 different columns regarding transactions: document number, financial number, quantity, unit of issue, case, transfer date to repair, unit price, approved repair cost, end repair cost, repair address, statute, inspection date after repair, service acceptance date after repair, and DL 645 period. Figure 7 shows a sample from the data. The ROR data are provided only for statistical analysis purposes; therefore, they do not include the materiel's national stock numbers or any other specific information for materiel use.

Figure 7. Sample Rows and Columns from the RoR Data.

Document Number	Financial Number	Quantity	U/I	Case	Transfer Date to Repair	Unit Price	Approved Repair Cost	End Repair Cost	Repair Address	Statute	Inspection Date After Repair	Service Acceptance Date after Repair	D_L 645
ABCD12345678	FGHIJ401466005	1	EA	ABC	1/1/10	\$10,000	\$750	\$2,500	A12345	Closed	1/2/2010	1/3/2010	3/10

Note: This data sample is provided to illustrate the original data. None of the content is real.

The time interval between the service acceptance and transfer date for repair, difference between agreed price and realized price, quantity, and statute were used during statistical analysis.

3. Discrepancy Data

The discrepancy data includes the TN's discrepancy reports records between 2010 and 2015. The raw data, obtained from the TN's Foreign Procurement Department, have 17 different columns regarding transactions: the discrepancy report, discrepancy date, discrepancy no, document number, suffix, NSN of wrong materiel, quantity, unit of issue, name of the materiel, case, statute, unit price, total price, QDR/wrong materiel transfer date, DL 645 charged, DL 645 credited, and explanation. Figure 8 shows a sample from the data. The discrepancy data were provided only for statistical analysis purposes.

Figure 8. Sample Rows and Columns from SDR Data.

Discrepancy Report	Discrepancy Date	Discrepancy No	Document No	Suffix	NSN of Wrong Material	Quantity	Unit of Issue	Name of the Material	Case	Statute	Discrepancy Unit Price	Discrepancy Total Price	QDR/Wrong Material Transfer Date	DL_645 that funds cut	DL_645 that funds refunded	Explanation
SDR	11/14/2012	ABC1234	ABCDE12345	A	12345678	2	EA	Item	ABC	Cr.Rfnd. Closed	0.50 \$	1.00 \$	11/10/2011	2012-09	2013/06	Wrong Material
SDR	11/14/2012	EFG5678	FGHIJ67890	B		1	EA		DEF	Cr.Rfnd. Closed	3,000.00 \$	3,000.00 \$		2012-09	2013/12	Less than Requested

Note: This data sample provided to illustrate the original data. None of the content is real.

The time interval between dates of discrepancy date, the DD 645 charged and credited, discrepancy total price, statute, discrepancy report, and explanation were used during statistical analysis.

4. Limitations

Significant limitations in data were discovered during the analysis. The analysis was limited by the size, content, and quality of the historical data records for the DRP, ROR, and SDR provided by the TN's Foreign Procurement Department. These size and content limitations affected the range of outcomes. Each dataset had its own limitations that may have affected the margin of error. It was understood that all information about the transactions was not available in the dataset due to classification concerns. In general, the datasets lack information about the materiel used in transactions and the specific details of the transactions. Additionally, the quality of some of the data was low due to possible human error during both the data collection and report generation phases.

Therefore, these limitations led to an omission of some data and planned statistical analysis. Despite the fact that these limitations were an obstacle for the study, there was sufficient available data on hand to examine trends and meaningful relationships between variables. This availability combined with the importance of the issues found in the literature review renders the statistical analysis valuable to conduct. Because there is little, if no, previous research conducted at the scope of this study, statistical analysis of the data is of great significance for creating a foundation for future research. Limitations also provided the opportunity to describe the areas for future research.

C. STATISTICAL METHODOLOGY

In this research, descriptive statistics and linear correlation were used to analyze the data. This research used some analytical approaches to explore the trends and factors that affected the efficiency of the procedures. The main purpose of these analyses was to understand the current situation of these procedures while showing whether major correlations exist between any of the variables. Descriptive statistics was used to provide quantitative summaries of data in order to present basic features of the datasets. Graphical presentations of the results were used to illustrate the data features. A univariate approach was used for descriptive statistics analysis. For determining the linear dependence of the variables on each other, linear correlation was used. Correlation analysis was applied to explore the strength of the relationship between independent variables. Prior to correlation analysis, missing or non-standard data were omitted from the datasets using either list-wise or pair-wise deletion, depending on the data size.

Three datasets had different characteristics related to different processes and procedures. Therefore, analytic and statistical approaches used in analysis differ slightly among the datasets. During the analysis, Microsoft Excel was used. Whenever possible, the JMP Pro 2012 professional discovery program was used to eliminate possible typos in manual calculations.

D. ANALYSIS

The following subsections explain the result of analysis of each dataset. Each dataset was analyzed according to some question that was prepared to support the research questions.

1. DRP Data

In analyzing the DRP data, this research aimed to answer four major questions to make further assessments: (1) What is the general picture of DRP transaction results? (2) How does the U.S. supply system respond to DRP orders from a timing perspective? (3) Is there a correlation between priority codes and response time? (4) Does transaction time have any correlation with other variables such as quantity, and total price amount of materiel ordered?

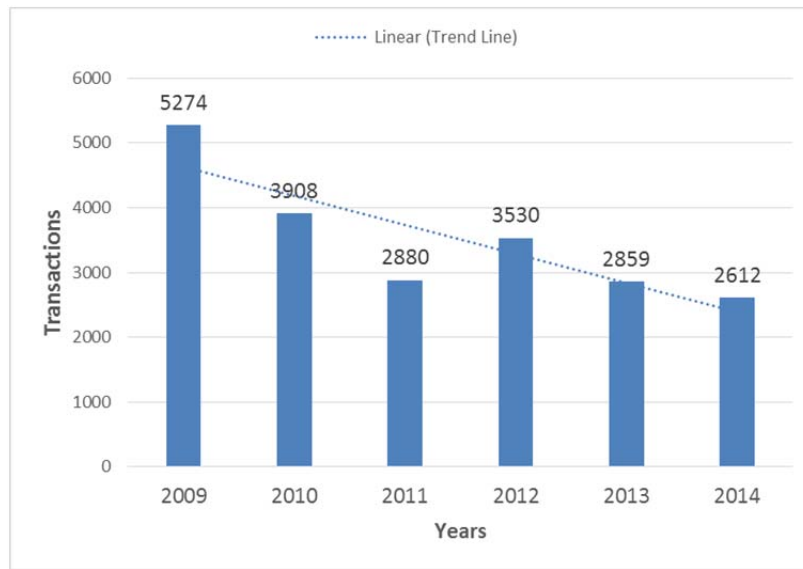
a. The General Picture of DRP Transactions

In the obtained DRP data, 22,038 transaction records existed. The transactions belonged to the time interval between 2009 and April 2015. In the following parts, univariate analysis was conducted column by column to show the general features of the data.

(1) Distribution of Transactions Over the Years

There are three different dates in a single transaction record: obligation date, shipment date, and establishment date. The establishment date, the date on which the transaction was established, was considered the start of the requisitioning for distribution analysis. Figure 9 shows a graphic created with the transactions over the years. For 2015, the data had approximately four months of transactions. Therefore, due to insufficient data, 2015 was not taken into consideration in the trend analysis. The trend analysis showed a slight downward trend for DRP transactions between 2009 and 2014.

Figure 9. DRP Transactions Over Years 2009-2014



(2) Priority Codes

As mentioned in Chapter II, there are three different priority codes given to a transaction by the purchaser: 03- Extremely Urgent (Critical), 06-Urgent (Not Critical), and 15-Routine. In the dataset, there were 8,240 transactions (37.4%) categorized as 03- Extremely Urgent, 13,792 (67.6%) categorized as 06-Urgent, and 6 (0.03%) categorized as 15-Routine code. Figure 10 shows the distribution of priority codes.

(3) Total Dollar Values of DRP Transactions

The Total dollar value of all transactions was \$43,281,298.00. Total dollar values of transactions over the years were: \$7,004,123 in 2010, \$7,467,427 in 2011, \$7,127,105 in 2012, \$4,903,390 in 2013, and 3,858,734 in 2014. Because 2015 had approximately four months of transactions, it was not considered in trend analysis due to insufficient data. The total dollar amount of the transactions over the years exhibits a downward trend, as shown in Figure 11.

Figure 10. Distribution of Priority Codes of DRP Transactions

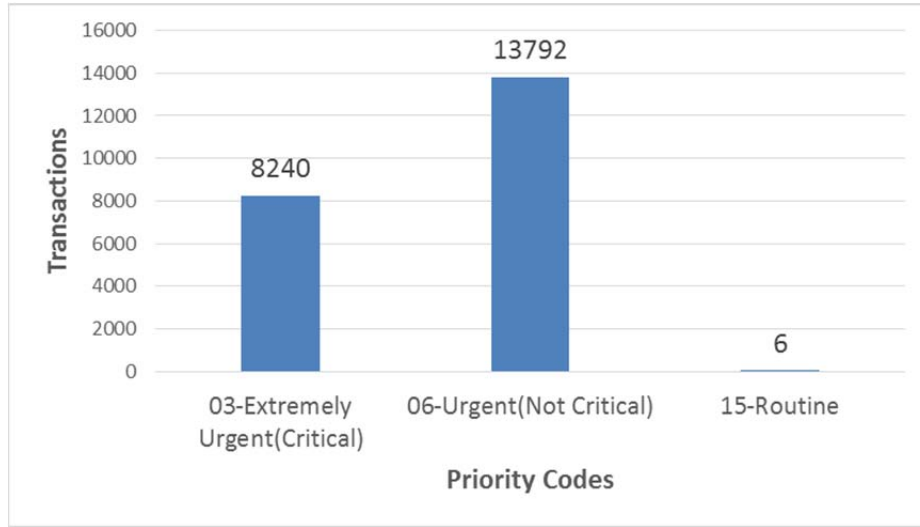
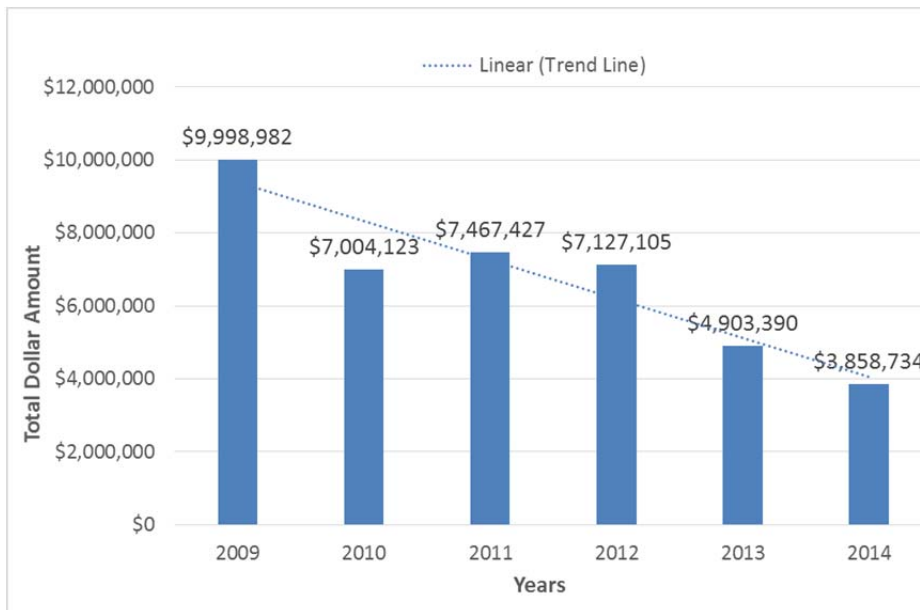


Figure 11. Total Dollar Amount of the DRP Transactions Over Years 2009-2014



(4) Status of Transactions

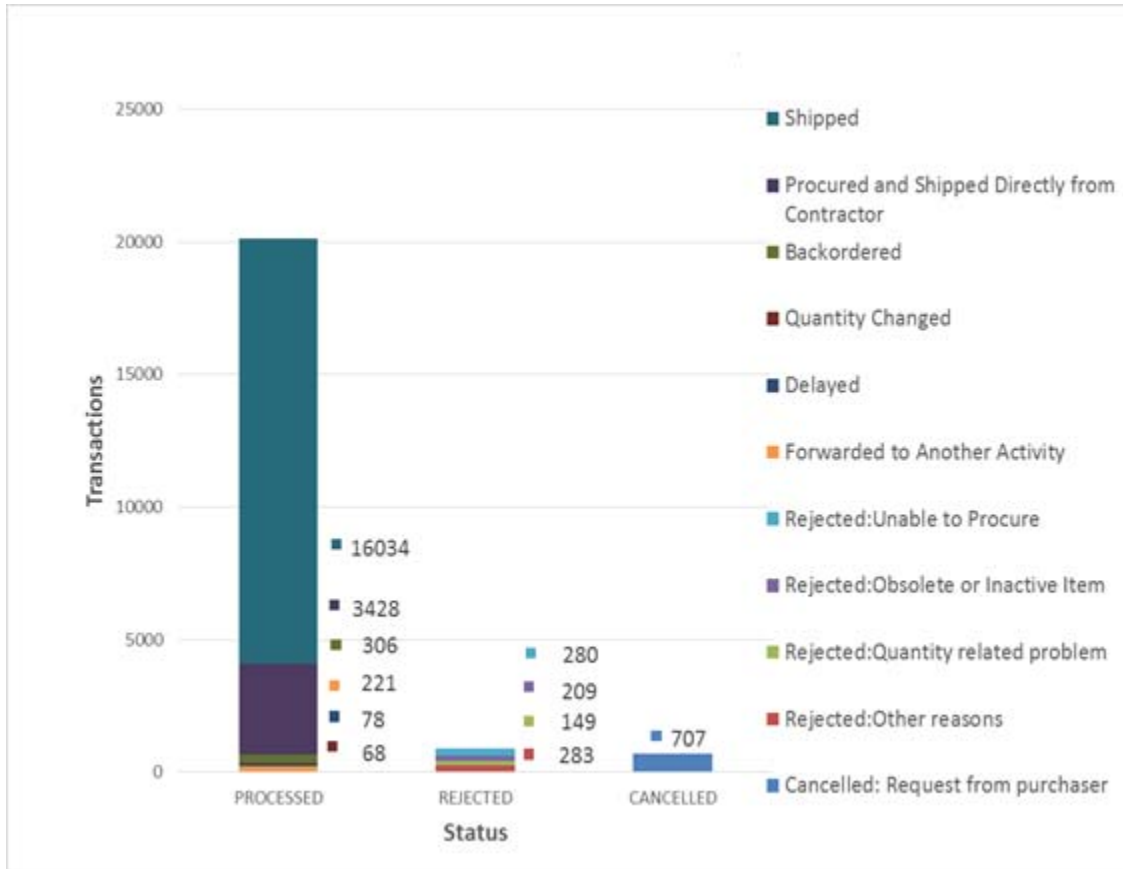
In the data, 29 different MILSTRIP status codes were found. NAVSUP (2011) provided detailed explanations of these codes in Chapter 2, pages 56-59 of its guide. For statistical analysis purposes, these codes were organized into three major categories:

processed, rejected, and cancelled. Then, these major categories were divided into other subcategories depending on the importance of the activity details. One hundred sixty-three (0.74% of the total) were missing or non-standard and were deleted using a list-wise deletion. According to analysis of the remaining data, 20,247 (92.6% of the remaining total) transactions were processed, 921 (4.2% of the remaining total) transactions were rejected, and 707 (3.2% of the remaining total) transactions were cancelled. Among processed transactions, 16,034 (79.19% of the processed) transactions were processed and shipped, 3,540 (17.48% of the processed) transactions were procured and/or shipped directly from the contractor, 68 (0.34% of the processed) transactions had a quantity change, 306 (1.51% of the processed) transactions were backordered, 78 (0.39% of the processed) transactions were delayed, and 221 (1.09% of the processed) were forwarded to another activity. Among the various reasons for rejection of the transaction, major reasons were found as follows: unable to procure the item (280 transactions, 30.4% of the rejected), obsolete or inactive item (209 transactions, 22.69% of the rejected), and quantity related problems (149 transactions, 16.48% of the rejected). Cancellations were the result of requests from the purchaser.

b. Time Lengths of Transactions

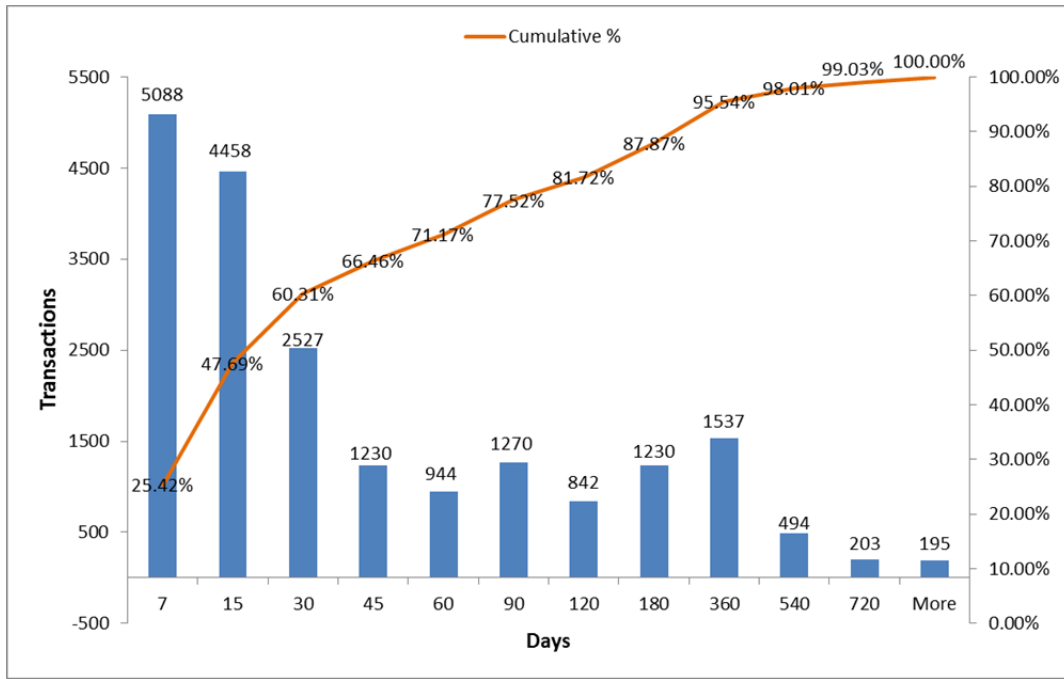
In assessing the U.S. supply system's response time length to for the TN's DRP transaction requests, the time interval between date columns was used. During the analysis, the shipment date was used as the end of the response time for the U.S. supply system. For the rejected and cancelled transactions that did not have shipment dates, the obligation date was used as the end of the response time for the U.S. supply system. With this assumption, the life of the transaction was measured with the interval between the establishment date and the shipment or obligation date. This time interval was accepted as a measure of the response time length of the U.S. supply system to TN's transaction requests.

Figure 12. Status of DRP Transactions



To eliminate missing or nonstandard data, all of the date columns were examined. Out of 22,038 transactions, 2010 (9.1% of the total) transactions had neither a shipment date nor an obligation date while 10 (0.5% of the total) transactions had nonstandard data. These missing and nonstandard data were eliminated by list-wise deletion. Descriptive statistics analysis showed that the average of the time interval between request and end of the transaction was 74.6 days. The maximum time interval was 1,947 days while the minimum was 0 days, which meant that the response happened within the same day. Figure 12 shows the histogram of DRP transaction time length. According to analysis, 25.42% of total transactions ended in the first week, 47.69% of total transactions ended within 15 days, and 60.31% transactions ended within 30 days. In a one-year period, 95.54% of the total transactions were completed. For further interval details, see Figure 13.

Figure 13. Histogram of the DRP Transactions' Time Lengths



c. Correlation Between Priority Codes and Response Time

To show the strength of the relationship between response time length and priority codes of transactions, correlation analysis was conducted. In summary, the correlation coefficient, the measurement of correlation r , can fall between -1 and 1. The larger the absolute value of r , the more correlated the variables. Negativity and positivity indicates the direction of correlation. As a result of correlation analysis, the *correlation coefficient* (r) for time and priority codes was found to be -0.0008, which means there is almost no linear correlation. However, when the histograms and descriptive statistics of the priority codes over time were analyzed, it was observed that the positive skewness of the extremely urgent transactions was larger than that of the urgent transactions while the range of the extremely urgent transactions was slightly smaller than that of the urgent transactions. The distribution of the extremely urgent transactions over the response time length was slightly denser in terms of slower response time lengths. This means that extremely urgent transactions tended to have slightly slower response time lengths than urgent transactions (see Figure 14).

Figure 14. Correlation Analysis Results and Descriptive Statistics of Urgent and Extremely Urgent Transactions Over Response Time Length

CORRELATION ANALYSIS		
	<i>Time Length</i>	<i>Priority</i>
Time Length	1	
Priority	-0.0007989	1
DESCRIPTIVE STATISTICS		
	<i>06-Urgent</i>	<i>03- Ext.Urgent</i>
Mean	74.00507977	75.3802266
Standard Error	1.247215362	1.565584244
Median	16	20
Mode	7	7
Standard Deviation	139.9940215	134.8039857
Sample Variance	19598.32606	18172.11455
Kurtosis	18.96721591	20.45564415
Skewness	3.770066885	3.832112929
Range	1947	1428
Minimum	0	0
Maximum	1947	1428
Sum	932390	558869
Count	12599	7414

d. Correlation Between Response Time and Other Variables

To assess whether any relationship existed between the time length and other variables, a multivariate analysis was conducted. Other variables were transaction quantity and unit price. According to the results, the correlation covariance for time length and quantity was found to be -0.0118, and the correlation covariance for time and unit price was found to be 0.13850. These results suggest that there was no acceptable correlation between time and the other two variables. Figure 15 shows the results.

Figure 15. Correlation Analysis Between Time Length and Other Variables

CORRELATION ANALYSIS			
	<i>Time Length</i>	<i>Quantity</i>	<i>Unit Price</i>
Time Length	1	-0.0118	0.1385
Quantity	-0.0118	1	-0.0325
Unit Price	0.13850	-0.0325	1

2. ROR Data

In analyzing the ROR data, this research aimed to answer three major questions in order to make further assessments: (1) How is the general picture of ROR transaction records? (2) How long were the transaction times? (3) How is the consistency between estimated and final repair prices?

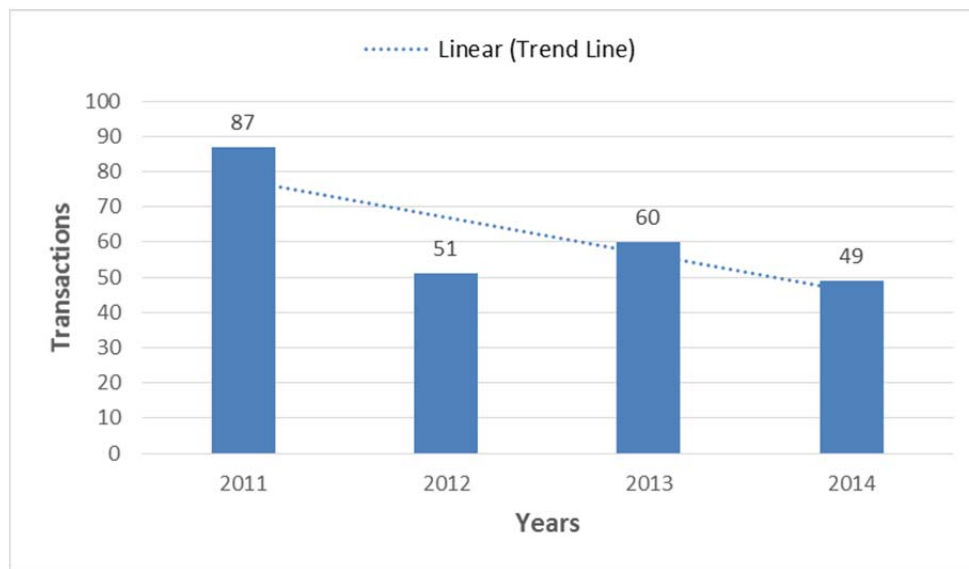
a. General Picture of Repair Transactions

In obtained ROR data, 545 transaction records exists. The transactions were part of the time interval between 2009 and April 2015. In the following parts, univariate analysis was conducted column by column to show the general features of the data.

(1) Distribution of Transactions over Years

There were four different dates in a single transaction record: the establishment date, the transfer date to repair, the inspection date, and the service acceptance date. The establishment date was considered the start for repair transactions, and the service acceptance date was considered the end of the repair transactions for distribution analysis. For 2015, the data had approximately six months of transactions. In addition, 13 transaction records did not have any dates. Therefore, these 13 transactions and the year of 2015 were not considered in the trend analysis due to insufficient data. Because the data had been gathered according to its service acceptance date after 2011, it was concluded that the data did not contain all transactions prior to 2011. Therefore, transactions that started after 2011 were used in distribution analysis for thoroughness and preciseness. The quantities were calculated using transfer date to repair data. Figure 16 shows the graphic created with the repair transactions over the years. A slight downward trend can be seen.

Figure 16. ROR Transactions Over Years 2011-2014



(2) Dollar Value of Repairs Over the Years

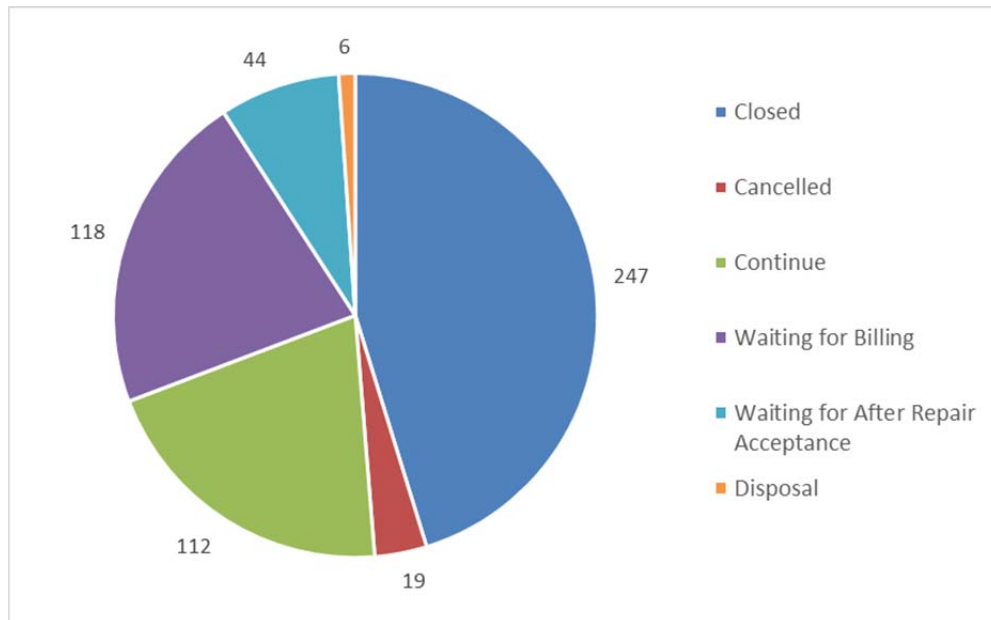
In the data, there were three different types of price information: the unit price, the approved repair cost, and the final repair cost. The approved repair cost was the estimated repair service price that the TN had agreed to at the beginning of transaction. The final repair cost refers to the repair cost that was billed to the TN. The transactions that involved completed repair services had final repair cost data. Because the repair time and cost significantly varies depending on the materiel and malfunction, it was hard to perform a general cost analysis over the years. This reason caused too many missing and insufficient data cells, rendering the data unusable in cost analysis. Despite numerous attempts with different approaches, no logical results could be gained from a general distribution analysis.

(3) Status of Transactions

In the data, 9 different elements of status information were found. For statistical analysis purposes, these codes were organized into 6 categories. These categories included closed, repair cancelled, repair continues, waiting for billing, waiting for after-repair acceptance, and disposal. Out of 546 transaction records, 247 (45.24% of the total) transactions were closed, 112 (4.2% of the total) transactions continued, 19 (3.48% of the total) transactions were cancelled, 118 (21.61%) transactions were waiting for billing, 44

(8.06%) transactions were waiting for after-repair acceptance, and 6 (1.10%) transactions were disposal. Figure 17 shows a pie chart to illustrate the distribution of repair transaction status.

Figure 17. Distribution of Repair Transaction Status



b. The Time Length of the Transactions

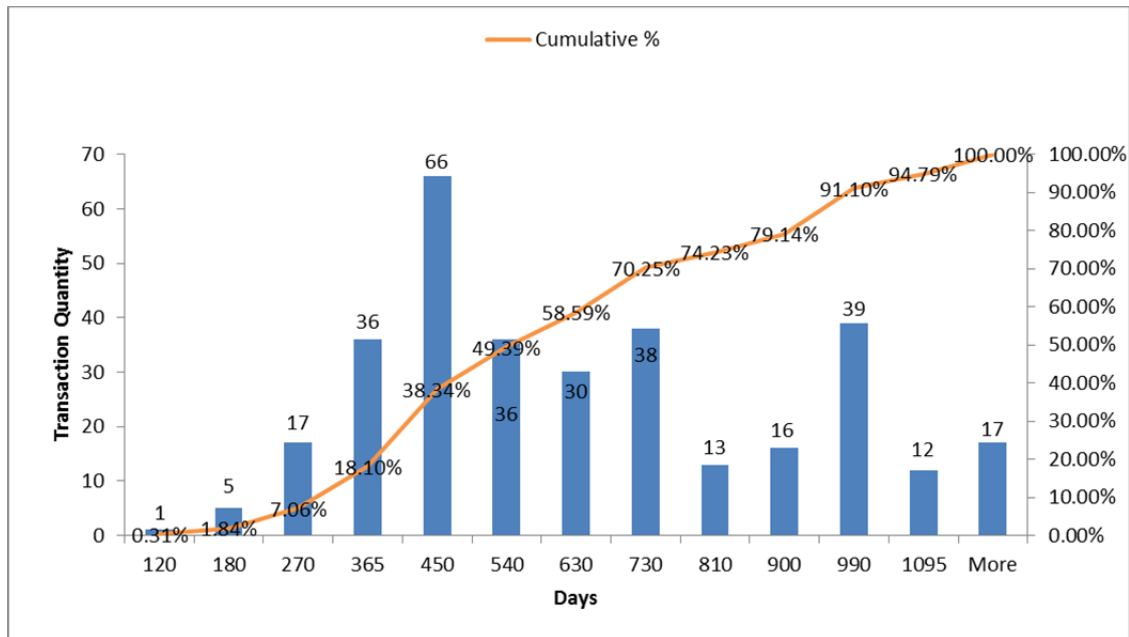
In the analysis of the time length of the transactions, the transfer date to repair was used as the starting point. Either inspection or acceptance date, depending on availability, was used as the ending point. 326 transactions had sufficient time data to assess the duration of transactions. According to descriptive statistics, the average length of the transactions was 615 days. Transactions were completed in a minimum of 110 days and a maximum of 2,455 days. See Figure 18 for descriptive statistics and Figure 19 for a histogram for ROR transaction time lengths. In the histogram, it can be observed that the time lengths were not distributed normally. It can be argued that there were double normal distributions with peaks in time intervals of 365 to 450 days and 900 to 990 days. In general, 82% of the transactions were completed after one year. In the first year, only 18% of all transactions were completed. In the second year, 52% of all the transactions were completed while more than 20% of the all transactions were completed between 365

and 450 days. In the third year, approximately 25% of all the transactions were completed while nearly 12% of the all the transactions were completed between days 900 and 990. More than 5% of all the transactions were completed in the fourth year.

Figure 18. Descriptive Statistics of ROR Transaction Time Lengths

<i>Descriptive Statistics of Repair Transactions' Time Lengths</i>	
Mean	615.2393
Standard Error	17.75994
Median	548
Mode	932
Standard Deviation	320.664
Sample Variance	102825.4
Kurtosis	5.296285
Skewness	1.634471
Range	2345
Minimum	110
Maximum	2455
Sum	200568
Count	326

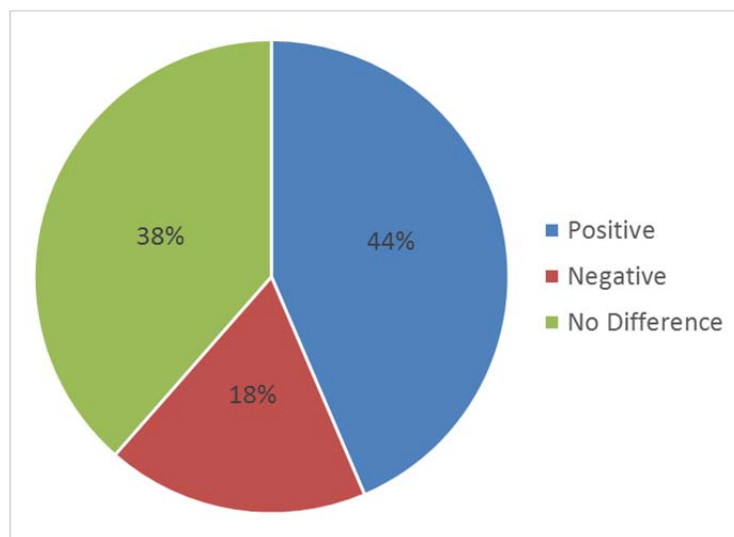
Figure 19. Histogram of ROR Transaction Time Lengths



c. Consistency Between Estimated and Final Repair Prices

In data, 188 transactions have both estimated and final repair prices. Among these, 9 transactions were excluded from analysis because they were either cancelled or disposed items. The final price for the cancelled and disposed items included all work completed before the decision was made. The remaining 179 transactions were used during the analysis. The difference between the estimated and final prices was calculated by extracting the estimated price from the final price. Because negativity can affect the statistical results, absolute values of all differences were used. According to the analysis, the average difference between estimated and final prices was \$7,405.45. The maximum difference was \$103,075 while the minimum difference was 0 (zero). In 69 (38.55% of total) transactions, there was no difference between the estimated and the final repair prices. Thirty-two (17.88% of the total, 29% of the different ones) transactions had a negative difference, with total value of \$144,791, while 78 (43.58% of total, 70% of different ones) transactions had a positive difference with the total value of \$1,180,784. The average of the positive differences was \$15,138 while the average of the negative differences was \$4,525. Figure 20 shows a pie chart to illustrate the distribution of the differences between estimated and final repair prices.

Figure 20. Distribution of the Differences Between Estimated and Final Repair Prices



3. SDR Data

In analyzing the SDR data, this research aimed to answer the following questions in order to make further assessments: (1) What is the general picture of the discrepancy records? (2) What is the quantity and dollar value of the discrepancies that were closed because of time or dollar value limitations?

a. General Picture of Discrepancy Records

In the obtained SDR data, 153 transaction records existed. Two transactions were list-wise deleted for missing data. The remaining 151 transaction were part of the time interval between 2010 and April 2015. Out of 151, 136 discrepancies were SDR-related while the remaining 15 discrepancies were QDR. A univariate analysis was conducted column by column to show the general features of the data.

(1) Distribution of Transactions Over the Years

There was only one date in a single transaction record. It was the discrepancy date. For 2015, the data had limited months of transactions. Therefore, reports belonging to 2015 were not considered for trend analysis due to insufficient data. The discrepancies were distributed over years as follows: three in 2010, 12 in 2011, 72 in 2012, 30 in 2013, and 24 in 2014. There was a significant increase in discrepancy reports in 2012. When the data for year 2012 was examined, it is found that more than half of the discrepancies had very low dollar values—less than \$500. Figure 21 shows the graphic created with the discrepancies over the years. No linear trend was found.

(2) Total Dollar Value of Discrepancies Over the Years

The total dollar value of all discrepancies was \$3,905,799.10. The total dollar values of discrepancies over the years were: \$134,710 in 2010, \$417,956.78 in 2011, \$372,688.22 in 2012, \$1,904,022.64 in 2013, and \$417,341.05 in 2014. For 2015, the data had approximately six month's records. Therefore, 2015 was not considered for trend analysis due to insufficient data. There was a significant increase in dollar value of the discrepancies in year 2013. When this anomaly was examined, it is found that one of the discrepancies belonged to very expensive item that had cost \$1,600,000. When this

outlier was extracted from the total dollar value of the discrepancies of 2013, the total became \$304,022.64 which is not very different than the other years. Therefore, a straight trend line was found when this outlier was ignored. The total dollar value of the discrepancies over years 2010-2014 are shown in Figure 22.

Figure 21. Distribution of Discrepancies Over Years 2010-2014

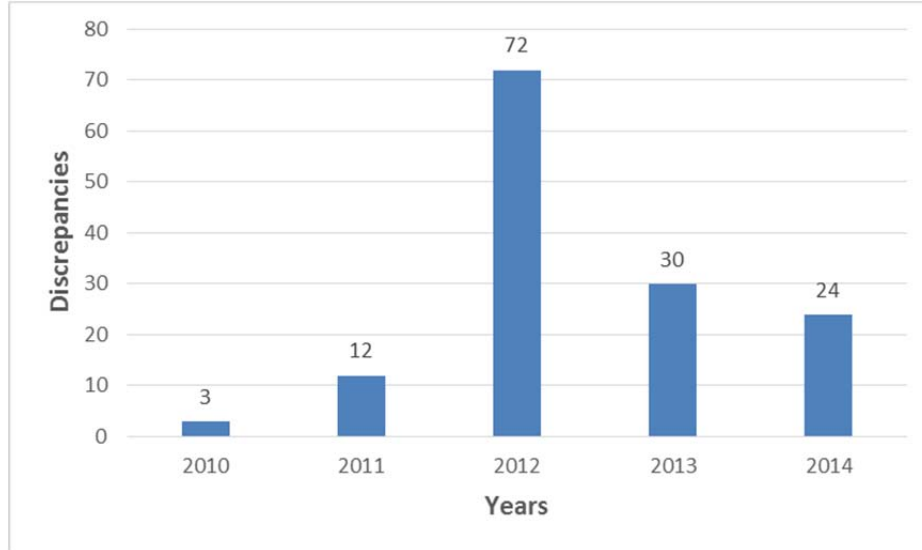
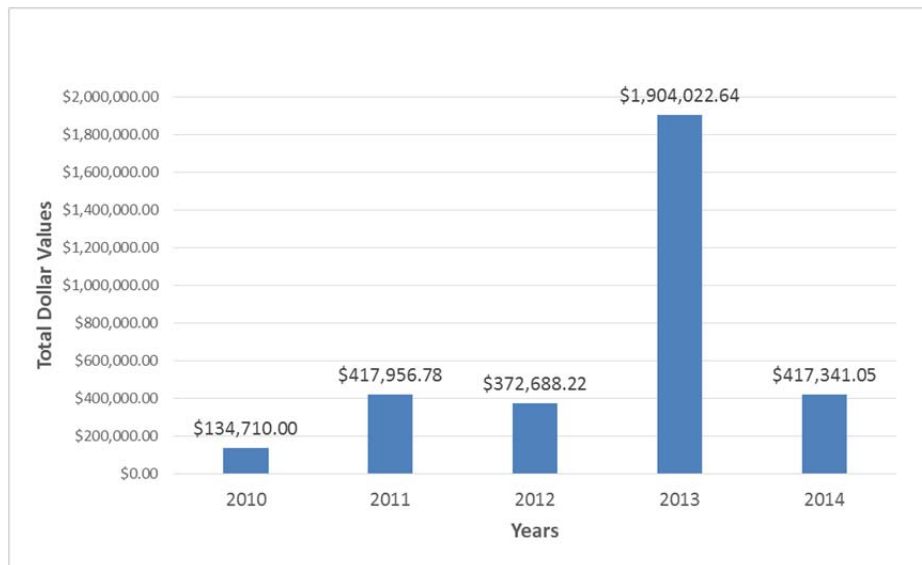


Figure 22. Total Dollar Values of the Discrepancies Over Years 2010-2014



(3) Status of the Discrepancies

In the data, 5 different elements of status information were found. For statistical analysis purposes, this information was organized into two major categories: processed, and discrepancy continued. Then, these two major categories were divided into other subcategories depending on the importance of the activity details. According to the analysis, 128 (84.77% of the total) discrepancies closed and 23 (15.23% of the total) discrepancies continued.

Among 128 closed discrepancies, 38 (29.69% of the closed) closed because of \$200 dollar limit, 11 (8.59% of the closed) discrepancies closed because they exceeded the one-year discrepancy submission limit, 28 (21.88% of the closed) discrepancies closed with a credit refund to the purchaser's funds, and 18 (14.06% of the closed) discrepancies closed with receipt of the materiel later due to either separate or later shipments. The remaining 33 (25.78% of the closed) discrepancies closed for various reasons such as return of the excess materiel received, a duplicate report, missing documentation, a rejection of discrepancy by the United States, a stock number change, or a change of the discrepant materiel. Among 23 continuing discrepancies, 13 (56.52% of the continuing) discrepancies were in process, 7 (30.43% of the continuing) were waiting for credit refund, and 3 (13.04% of the continuing) were waiting for service acceptance by the TN. See Figure 23 for the distribution of status of discrepancies; see Figure 24 for the total dollar values of discrepancies over the status of discrepancies.

b. Quantity and Dollar Value of the Discrepancies Closed Due to Limitations

According to the analysis, the total dollar value of 128 closed discrepancies was \$2,862,090.90. The total dollar value of 49 closed discrepancies due to limitations was \$50,221.26 (1.75% of closed). The dollar values of these discrepancies were as follows: 38 discrepancies closed due to the \$200 limit with a dollar value of \$1,898.59 and 11 discrepancies closed due to the one-year limit with a dollar value of \$48,322.68.

Figure 23. Distribution of Status of Discrepancies

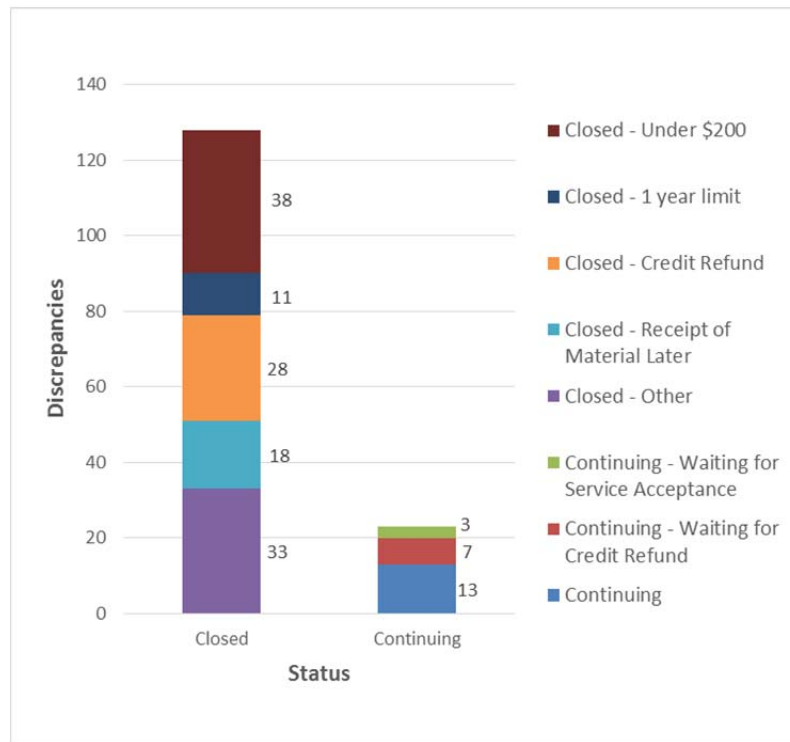
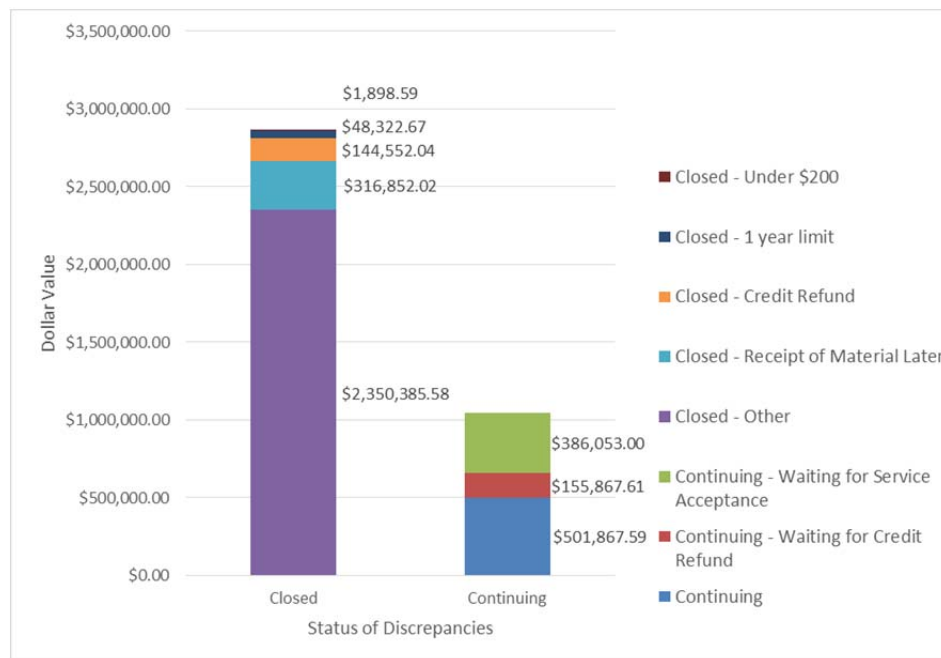


Figure 24. Distribution of Dollar Values of Discrepancies over the Status of Discrepancies



IV. FINDINGS AND DISCUSSION

A. INTRODUCTION

In this chapter, findings from both the literature review and data analysis are presented.

B. FINDINGS FROM DATA ANALYSIS

Results of the analysis of each dataset revealed different findings. Because each dataset was related to different processes and procedures, the results were assessed accordingly.

1. DRP Data

In the general picture of the DRP data, especially in the distribution of the transaction over years, a downward trend was found. In parallel, the total dollar values of the transactions over the years also showed a downward trend. Both transaction quantities and total dollar values decreased significantly.

The status of the transactions showed that most of the transactions (92%) were processed while only a small amount (4.7%) was rejected. The remaining transactions were cancelled by the purchaser. Most of the processed transactions (97%) were shipped and/or procured.

The response time of the U.S. supply system to DRP transactions was impressive. A quarter of the transactions were processed within seven days. By day 15, nearly half of the transactions were completed. In the first 75 days, more than seventy-five percent of all transactions were completed. Most of the transactions (95.5%) were completed within one year.

A third of the priority codes given by the TN were extremely urgent, and those remaining were urgent. Routine transactions were of insignificant quantity. Correlation analysis did not show any significant correlation between priority codes and response times. However, other analysis showed that the transactions with extremely urgent codes

tended to be completed in less time than urgent transactions. In addition, the range of the extremely urgent transactions was less than that of the urgent transactions. This study concludes the reason for the lack of a strong correlation between priority codes and response time is the U.S. supply system's quick responses to most transactions.

2. ROR Data

In the analysis of the data that has sufficient time information, time lengths of the repair transactions were found to be very long. This return-of-repairable data showed that repair transactions had the potential to impact the TN in terms of readiness and cost. The average length for transactions was 615 days, and less than twenty percent of the transactions were completed in the first year. More than half of the transactions were completed in the second year, and approximately one quarter of the transactions were completed in the third year. Transaction length consists of the time that passed during shipment, all repair-related work, and inspections. The purpose of the repair services is to repair an unserviceable end item (SME or MDA) or spare parts. The very long length of ROR transactions can have two detrimental effects for the TN: a decrease in its readiness levels and an increase in the amount of spares to be stocked.

Most of the time, if an item fails, it is immediately replaced by the spare one. Then the failed item is repaired and used as a spare again. This practice reduces the number of spares to be stocked, thus cost effective. The required repair time for repairable items is considered in spare quantities and the spare-part procurement process (Jones, 2006). Because most of the end items are highly expensive, it is very costly to maintain a high number of spares. Therefore, repair of an unserviceable end item has great importance at the macro level. When an end item or system fails, its operational availability decreases if not disappears totally, causing a drop in the readiness of the TN to satisfy its operational needs. While waiting for the repair of the items during long ROR transaction time lengths another failures may occur, and spares may become insufficient. This poses a high risk for readiness levels. Therefore, this situation requires the TN to keep more spare parts. Additionally, long time lengths of ROR transactions may create administrative uncertainties, especially for planning activities. As a consequence,

application of ROR for FMS items may cost a lot more than predicted, thus making organic national repair capabilities less costly and more attractive to the TN.

In addition, repair work varies depending on the malfunction and complexity of the materiel. Therefore, it is very hard to come up with a general conclusion about the repair work itself. However, it can be concluded that the time length of the repair transactions are very long and should be shortened.

Distribution of the repair transactions over years showed a slight downward trend. Most of the transactions had either been closed or had continued. Small amounts were cancelled or categorized for disposal.

In the distribution analysis of the differences between estimated and final repair prices, it is found that nearly forty percent of the transactions that had sufficient price data were completed for the estimated price. Among the transactions that were completed for different prices, the majority (70%) had a higher final price than the estimated one. The total positive difference—in which the final price was higher than the estimated one—was more than eight times the total negative difference—in which the final price was lower than the estimated one. Despite the difficulty of the repair price estimation due to uncertainties, the analysis showed that the U.S. supply system price estimation did not perform well.

3. SDR Data

Distribution analysis of discrepancies over years and the total dollar values over years did not show any trends. There were unusual increases in discrepancy amounts in 2012 and in total dollar values in 2013 due to an outlier. There may have been various factors affecting these results. Therefore, no conclusions are possible.

Approximately 85% of the discrepancies were closed. Among these, nearly 30% was closed because their prices were under the \$200, and nearly 9% of the closed discrepancies were closed due to a submission after one year. Although the dollar value of these closed discrepancies due to the limitations was very low, they account for nearly 40% of the discrepancy submissions. The dollar value of the discrepant materiel is not the

measure of its importance to the users. Therefore, discrepancies rejected due to limitations should not be ignored just because their dollar value.

C. FINDINGS FROM LITERATURE REVIEW

In this section, findings from the study are presented in four subsections: history; the overall FMS process; DRP, ROR, and SDR; as well as alternative methods.

1. History

Turkey has had deep ties with the United States in arms transfers. This relationship can be traced back to the roots of SA and the FMS program. Turkey has seen the United States as a primary arms supplier to modernize its military. However, the bitter taste of political events, like the President Johnson's letter to the Turkish prime minister and the U.S. arms embargo to Turkey between 1975 and 1978, has drastically changed Turkey's view toward foreign arms transfers. Especially after the embargo, Turkey began to build its own defense industry in order to become self-sufficient in arms supplies. Today, there are enormous efforts to maximize the indigenous capabilities for the defense materiel. The TN is one of the leading organizations of these efforts, with many national projects, systems, and platforms under its purview. Therefore, the sensitivity toward foreign purchases is significant. At the same time, many U.S. systems exist within the TN's inventory, which requires continuous support.

2. The Overall FMS Process

FMS is a well-structured and highly regulated program governed by U.S. law. These features create a high level of bureaucracy while causing very long time delays for transactions. In addition, FMS can be affected by temporary political trends and lobbyism in the United States because of the USG and the U.S. law-making authorities oversee the process. For third party beneficiary rights, the double contractual agreements in FMS create a disproportionate burden on purchasers because the LOA is an international agreement without the *force and effect* of the law.

In the FMS program, the purchaser must oblige every T&C written into the LOA. Most of the terms and conditions put heavy responsibilities on purchasers while

providing no flexibility—except for sole source selection. Moreover, T&Cs related to limitations, title transfer, administrative surcharges, and the best effort principle creates stress on the transactions. In fact, many of the USG’s actions in FMS, including the determination of timelines and prices based on the USG’s best effort, disfavor the purchasers due to the uncertainties they cause. There are three types of FMS cases: defined order, blanket order, and CLSSA. Both DRP and ROR are based on blanket orders. The USG conducts business with a no profit, no loss principle, with an aim to not profiting from the transactions while incurring no costs to U.S. taxpayers. However, in a DISAM journal article, Froman (1987) indicated that the “unanticipated expenses [of the transactions from DOD stocks] becomes the purchaser’s financial problem” (p. 92) especially in case of discrepancies. Froman, (1987) underlined that there should not be any excuse for “defective performance under a contract for sale of good ... [and USG’s] good faith performance and absence of knowing misconduct are not enough” (p. 93). While there is no transparency and or certainty over the administrative efforts and associated costs, the USG charges customers an administrative surcharge based solely on a percentage of the total price of the item to make the transactions free to U.S. taxpayers. In two reports, the U.S. Government Accountability Office (GAO; 1999; 2009) pointed out the inefficiencies of DOD regarding FMS. One of the report (1999) indicated that “[DOD] does not have the sufficient information to determine the administrative costs associated with FMS” (p. 3). Another report published ten years later strongly echoed this finding again as “DOD lacks the information needed to effectively administer and oversee the FMS program....Within the last 10 years, DOD twice adjusted the surcharge rate...without knowing if the rates reflect the true cost the administer the program.”(p. 3).

The U.S. Navy supply system provides materiel and services to FMS purchasers as if they were U.S. customers. The intention of this approach is to provide standard U.S. supply support to the purchasers; however, this support may have problems and insufficiencies that disappoint the customers. It is mentioned in a recent GAO (2015) report that the “DOD’s inventory management practices and procedures have been ineffective and inefficient,...[DOD supply chain management has] unmet delivery standards and time lines for cargo shipments as well as incomplete delivery data for many

surface shipments,...weaknesses in maintaining visibility of supplies” (p. 184). Another GAO report (2010) points out that DLA has “unresolved problems with accurately estimating lead times needed to acquire spare parts” (Preface). Therefore, understanding the FMS process and the U.S. supply system is extremely important for FMS purchasers to experience successful transactions.

3. DRP, ROR, and SDR

The U.S. Navy’s DRP process and procedures follow simple logic to procure support materiel under FMS. Its basic structure as a blanket order helps to eliminate some of FMS’s bureaucracy, thus helping to expedite transactions. It is limited, however, to the support materiel for FMS end items.

The ROR process provides repair services for most FMS materiel. The transportation of unserviceable materiel to and from the United States poses risks to success of the program due to possible problems in timing and title transfers.

The SDR is the procedure to report discrepancies for FMS-related transactions. There are various types and categories of discrepancies. The completeness of the information provided and adherence to the instructions are vital for the success of the process because the USG is final authority for discrepancy outcomes. Discrepancies that have been valued at less than \$200 or submitted one year after the transaction are rejected without further review.

4. Alternative Methods

DCS is an alternative way for obtaining U.S. materiel and services. In contrast to government-to-government relationships in FMS, purchasers go directly into business with U.S. commercial vendors. When compared to FMS, DCS has advantages and disadvantages. The purchaser must perform all administrative efforts without the help of the USG. Instead of applying DCS to all intended transactions, the purchasers use it depending on the materiel and situations.

DLA Disposition Services try to sell the disposed U.S. materiel to eligible organizations and programs. There is no continuous supply for these items. Availability is

uncertain, and the condition of the materiel varies. Materiel is sold as is, and the price depends on its condition. Materiel is listed for a limited time. Therefore, DLA Disposition Services is found as an useful option that should be considered before starting transactions under other programs; however, it should be considered a supplemental tool, not a total replacement.

WWRS is a program in which FMS countries buy excess materiel from other FMS countries. There is no continuous supply for materiel since the sales are only for excess materiel, and availability varies. In addition, the process involves materiel transportation to and from the United States. Therefore, WWRS is found as an useful option that should be considered before starting transactions under other programs. However, it should be considered a supplemental tool, not a total replacement for other programs.

RIRO is a repair and replacement program administered by the U.S. Navy. Under RIRO, customers receive materiel promptly instead of waiting for unserviceable items to be repaired. However, because RIRO is part of CLSSA cases it cannot be a supplemental tool for other programs. RIRO can be added to a CLSSA case which was designed to satisfy support materiel needs for FMS end items. Therefore, a comprehensive CLSSA case with RIRO can be considered as an alternative option to blanket orders of DRP and ROR combined.

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V. CONCLUSIONS, RECOMMENDATIONS, AND AREAS OF FUTURE RESEARCH

A. INTRODUCTION

This chapter addresses the research questions presented earlier and provides conclusions and recommendations to improve the existing state of the U.S./TN DRP, ROR, and SDR. As this paper is limited in scope and data, areas for further research are explored as well.

B. CONCLUSIONS

This research is concluded in the following subtopics in an effort to answer the research questions.

1. The General Picture of the US/TN's FMS Program and the Current State of its Associated Procedures

The significance of SA and the FMS program has been beneficial for both the United States and purchaser countries. Traditionally, FMS is seen as one of the main tools for reaching the foreign policy and national security goals of the United States and purchaser countries. However, this approach lacks to mention the importance of its side effects on not only defense industries of both the buyer and seller but also internal public policies. As an ally of the United States and a NATO member, Turkey has fulfilled many of its security needs via FMS. However, history has shown that momentary political decisions of the United States regarding FMS have affected Turkey's view toward foreign arms sales in a negative direction. In parallel to this fact, the Turkish Navy (TN)'s attitude toward FMS is still under the effect of the U.S. Congress' recent politic decisions that were made with short-term interests and lobbyism. In Turkey, rigorous efforts have been made to build up the national defense industry since the U.S. arms embargo of 1975-1978. These efforts involve not only major end items, such as national corvettes and frigates, but life-cycle support materiel as well. Additionally, the U.S. supply system conducts its business for FMS purchasers as it does for U.S. components. The intention of this approach is to ensure FMS purchasers not treated less than U.S. customers.

Despite the positive intentions of this approach, they actually create risks for the success of the FMS program because standard U.S. supply support has many problems and insufficiencies that were, as indicated in recent GAO reports. Moreover, this approach neglects to ameliorate situations between the USG and purchaser countries like Turkey. Under the sensitive climate, any problem or dispute in the U.S. supply system may significantly affect the purchasers by changing their overall view of the FMS and the United States as arms suppliers.

A high level of bureaucracy in the FMS program creates an enormous administrative burden that can cause delays, misunderstandings, and disputes. Purchasers do not have third party beneficiary rights to pursue judicial resolutions for disputes with commercial vendors as a result of double contracting and the LOA's lack of *force and effect of law*.

Unanticipated expenses becomes the purchaser's financial problems as a result of the no profit, no loss principle. There is neither transparency nor certainty regarding U.S. administrative efforts while the USG charges customers with an administrative surcharge as a certain percentage of the item price. The "best effort" concept in T&C of the LOA serves as a protection for the USG in cases of misconduct unmet costs and schedules. Good faith performance and the absence of the misconduct are considered excuses under the FMS contractual agreement. In addition, to problems created with *no loss, no profit* and *best effort* principles, other strict rules and limitations stress the process while tying the hands of the purchasers, causing dissatisfaction. Extreme inflexibility for the purchaser leaves no option but to consider other methods and suppliers. The United States declares its preference that friend and ally nations to choose the United States as a supplier for defense materiel; however, FMS's design, which is vulnerable to U.S. politics, is pushing the purchaser away from the United States.

Analysis of the DRP data on hand showed that the U.S. supply system's response to DRP requests from the TN is impressive, especially with timing considerations. Although it was found that the DRP is simplified and effective as intended, there was a downward trend in the TN's DRP transaction records. Without a comprehensive trend analysis with complete data, it is unwise to form conclusions based solely on this

analysis. Nevertheless, this trend can be perceived as an indication of the results of both the TN's efforts for improving its indigenous capabilities and the U.S. Congress's continued decisions not to give frigates to Turkey. Success of the TN's national ship programs and its efforts of maximizing the indigenous support elements, combined with ongoing decommissioning of old U.S. ships in the TN's inventory, could be the reasons for the downward trend yet success of the procedures.

From the analysis of the ROR data, it can be concluded that the average time of the length of ROR transactions—consisting of repair-related work and time spent during administrative works and transportation—is very long. Since the repair-related work varies significantly depending on the malfunction, the administrative work and transportation may be the main contributors to the long transaction time lengths. This long time lengths create a risk for the TN's readiness while requiring more spare parts. As a consequence, ROR may be more costly to the TN than previously considered. Moreover, the difference between prices of estimated and final repair work is unpleasant for the customer since it affects budgeting.

The number of discrepancy transactions, which were rejected because of time or dollar limitations, is very high. Although their dollar value was low, this high quantity of rejections due to limitations creates frustration and disappointment at the user and administrative levels for the purchaser. The fact that there are many low-cost items with discrepancies could indicate quality control problems for inexpensive commodities in the U.S. supply system. Furthermore, a low-cost item can be part of a high-cost end item. In addition, low-cost discrepant materiel could be part of a high-cost end item. This discrepant materiel can affect operational readiness depending on the situation. Thus, the effects and importance of the rejected discrepancies—solely for the dollar or time limits—can cost far beyond from their monetary values. Additionally, FMS transactions create many discrepancies, showing the inefficiency of the U.S. supply system. In support, GOA reports repeatedly underline this inefficiency. Doing business in good faith with best efforts could be one of the contributors to these discrepancies. Despite the aforementioned problems, discrepancy handling by the U.S. Navy after a discrepancy emerges seems fairly good.

2. Suitability of Alternative Methods for Procurement of U.S. Spares and Repairs Other Than FMS DRP and ROR

This research defined four different alternatives methods for U.S. spares and repairs. Traditionally, DCS has been seen as the only method other than FMS. However, there are also other means to buy spares and repair services within or related to the FMS program. DCS, WWRS, and DLA Disposition Services methods lack the wide range of materiel and services for which FMS provides access. DCS may eliminate the bureaucracy and shorten the time length of the transactions, but it requires the purchaser to perform special care and administrative attention during the business with commercial contractors. Both DLA Disposition Services and WWRS were found useful supplements that should be considered before starting a DRP transaction. Nevertheless, they cannot provide a complete alternative due to lack of materiel supply. A CLSSA case with the U.S. Navy's RIRO procedures can be an effective alternative for both the DRP and ROR. Nevertheless, CLSSA requires costly upfront investments in U.S. supplies, which may not be suitable to Turkey due its limited budget.

3. Summary

In conclusion, the literature review and data analysis showed that FMS does not have efficient processes and procedures in place while it is certainly appreciated because of the value of efforts and good intentions. The GAO confirms that there are many problems in the administration and management of the FMS program by its own investigations. This costs in terms of money, time, and readiness, which has led the TN to look for other options.

C. RECOMMENDATIONS

As was found in the literature review, FMS does not evolve enough to satisfy the purchaser needs and expectations in this ever-changing world. It can be deduced from the conclusion about the general picture of the FMS program that the USG should institute reforms to improve the overall system that was structured and established decades ago. The literature review showed that sales of FMS support materiel and repair services are of great significance to purchaser countries and should not be ignored even though they

do not involve sales of end items. This research came up with the following recommendations for improving the existing state of Turkish FMS DRP, ROR, and SDR activities.

1. Changes Needed in the FMS Structure and the LOA's T&Cs

The literature review points to the need for structural changes in the overall FMS structure in order for the United States to be more competitive in arms sales. In addition, the FMS process suffers from administrative and bureaucratic burdens. Thus, the unnecessary bureaucratic work should be eliminated to make the program and associated procedures more effective. Also, FMS countries should be given third party beneficiary rights to sue for reparations from U.S. commercial vendors.

Many clauses in the standard T&Cs, including but not limited to the title transfer policy, limitations, and *best effort* principle, are written in favor of the USG and are obstacles for the success of the FMS program. Therefore, either the USG should reshape the T&Cs generally or the TN should negotiate to change them in the LOA development process to ease suffers it experiences. Because it was found that the title-transfer policy of the materiel stresses both the system and the purchasers by creating discrepancies and putting the responsibility burdens on the purchasers, it should be restructured. In the data analysis, it was found that many discrepancies were rejected due to the \$200 and the one-year limitation without any further review. Limitations on transactions should be eased if not eliminated: \$200 and one year limitations for discrepancy submissions should be removed as a result of the disappointment and frustration they may create. The USG should conduct business with more certainty instead of with its best effort. The uncertainty and the protection, which the best effort concept creates, affect the purchaser's planning activities and decrease its trust toward the United States. To strengthen the trust of its purchasers, the USG should assign administrative surcharges according to the real administrative work and eliminate the best effort principle from the T&Cs in the LOA. While doing business at the micro level, the U.S. supply system should consider macro-level sensitivities and situations. It is understood from findings that the U.S. supply system provides same service for the customers: however it has

problems and inefficiencies. Therefore, the current trends and view of the TN toward foreign arm sales should be taken into consideration and transactions should be handled with more understanding and care by U.S. supply system.

2. Improving the Turkish National Industry for Spares and Repairs

To alleviate suffer it faces from costly and lengthy foreign purchases, the TN should speed up and increase its efforts to gain its indigenous resources and capabilities for spare parts and repair services. The literature review and the data analysis uncovered many practices in the FMS process that are structured in favor of the United States, which eliminates the fairness of the activities on the commercial side. In particular, the title transfer policy, the many restrictions over the use of materiel, and limitations on discrepancies stress the purchasers to a great degree. In addition, the data analysis showed that the ROR has significant time lengths put the TN's readiness levels at risk and increase the costly need for keeping more spare parts. When the effects of the politics, currency differences, budget restrictions, problems in the FMS program, and increased operational needs are evaluated, it is easy to see that the TN needs to acquire more indigenous capabilities to fulfill its spare part and repair service needs for time and cost effectiveness.

3. Increasing the Use of Alternative Methods

The literature review and data analysis showed that the U.S./TN FMS procedure can create problems and disappointment while alternative methods do exist. To alleviate the problems it faces, the TN should utilize other means for obtaining spare parts and repair services. In the literature review, DCS and CLSSA were found worthy for supplying some important types of materiel. In addition, due to the possible time and cost savings from WWRS and DLA Disposition Services, the availability of needed materiel in those programs must be checked before a DRP transaction request is made.

D. AREAS OF FUTURE RESEARCH

This research was conducted with limited scope and data. Therefore, the following actions for further research are recommended:

- Increase the size, completeness, and details of the datasets to reveal factors affecting the results,
- Conduct an analysis to identify the responsible parties for the long time lengths of ROR transactions,
- Investigate whether the structural improvements are possible in the FMS program,
- Conduct an analysis of the TN's structure for FMS DRP, ROR , and SDR to explore areas for improvement,
- Evaluate the detailed processes of the alternative methods to make a comparative analysis of FMS's DRP and ROR, and
- Investigate the current availability of the Turkish spare parts and repair services that TN procures.

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APPENDIX. POTENTIAL ADVANTAGES AND CONSIDERATIONS OF DCS

Table 5. Potential Advantages and Considerations of DCS

Potential Advantages	Considerations
Potential for fixed delivery or fixed price, with penalty if contractor fails	Requires considerable experience and sophistication by country negotiators.
Business-to-business relationship allows country to negotiate cost and contract terms.	If closer military-to-military relationships are a purchaser's objective, FMS provides an avenue to achieve this objective.
Direct negotiations with contractor can result in a quicker response.	Requires considerable experience and sophistication by country negotiators.
Generally better support for nonstandard items.	Purchaser must decide upon desired degree of standardization with U.S. forces.
More capability to tailor package to unique country needs.	Tailored package may detract from standardization desires.
Continuity of personal contacts with contractor technical personnel.	Value of continuity must be compared to the value of direct military-to-military contacts.
New equipment directly from production line.	Option exists to request only new and unused items via FMS.
Lower prices possible under certain circumstances.	Final price may be dependent on experience and sophistication of country contract negotiators.
Generally fixed payment schedule which eases budgeting problems.	Payment schedules may be more front-loaded than under FMS.
Purchaser can include offset provisions in one contract.	Purchaser can negotiate offsets (directly with contractor) and still procure under FMS.
FMS administrative surcharge and DOD management costs can be avoided.	Purchaser must consider entire cost of transaction, including its contracting staff costs and possibly increased contract administrative costs.
Commercial purchases of some types of items could help to create and develop a procurement capability.	Scarcity of resources and time may not allow for retaining procurement staff.

Source: Defense Institute of Security Assistance Management. (2015). *The management of security cooperation (Green book)* (34.1 ed.). Wright-Patterson AFB, OH. Retrieved from <http://www.disam.dsca.mil/pages/pubs/greenbook.aspx>

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